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Heating equip. 2
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Gilbarco

Architect's Manual

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GILBERT & BARKER MANUFACTURING CO.

SPRINGFIELD, MASSACHUSETTS · TORONTO, ONTARIO, CANADA

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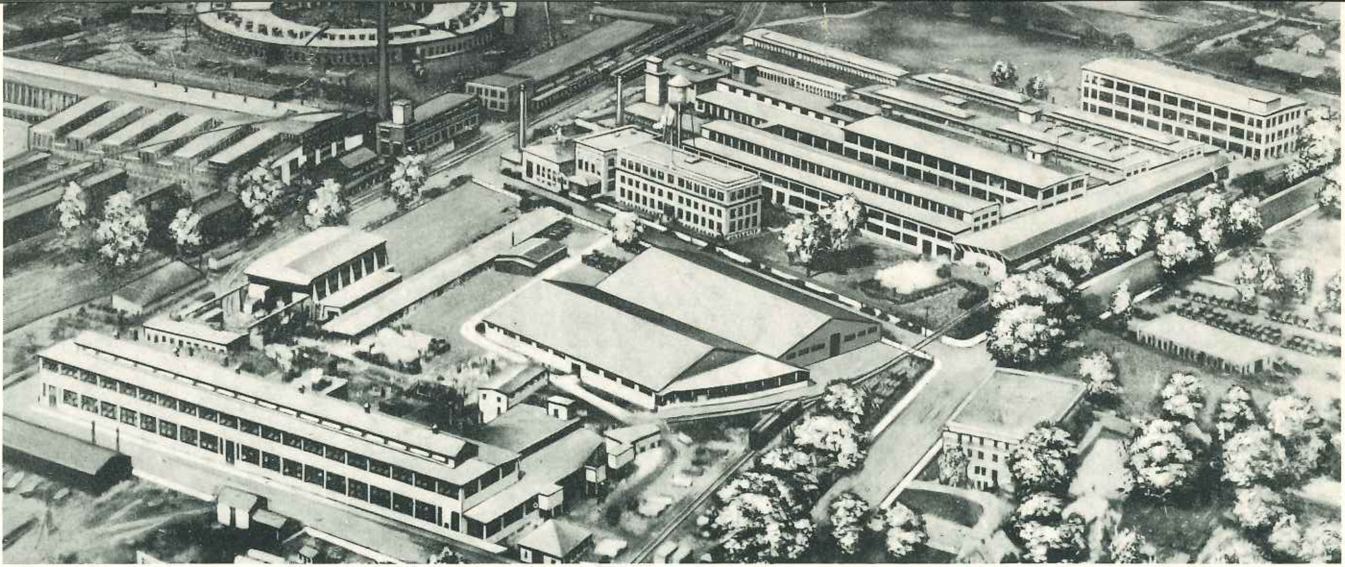

PLANT OF
GILBERT & BARKER MFG. CO., SPRINGFIELD, MASS.

The stability and character of the company which makes the oil burning equipment an architect recommends means much to his reputation and to his clients' satisfaction. Today there are thousands of oil burners installed throughout the country whose makers have gone out of business and whose owners are deprived of the service which they have a right to expect. In the selection of automatic home heating it is vitally essential to know that the manufacturer has sufficient knowledge and resources to ensure not only a dependable product but dependable service throughout the life of the equipment.

Gilbert & Barker Mfg. Company is one of the oldest and largest manufacturers of gasoline and oil dispensing and oil burning equipment in the world. It was established in 1865. More than seventy years ago this old New England firm manufactured the famous Springfield Gas Machine — a machine that used gasoline to generate gas for heating and lighting purposes. Fifty years ago a complete line of Industrial Oil Burning equipment was introduced and quickly became known throughout the country. Thirty years ago a line of gasoline and oil dispensing and storage equipment was produced which is now used in 104 countries throughout the world. Ten years ago Gilbert & Barker's first automatic oil burner was introduced in a range of models to meet all heating requirements, both in homes and public and commercial buildings. In 1934 the Company entered the Domestic Air Conditioning field with the most advanced equipment developed up to that time.

Today Gilbert & Barker manufactures three lines of oil heating equipment: Gilbarco, Ballard, and Esso. Each line includes 8 models of Domestic Oil Burners which enable an individualized solution of any heating problem; 8 models of specially designed oil-fired Boiler Units; 8 models of Domestic Air Conditioning Units; 2 models of Gravity Furnaces; 2 models of oil-fired Hot Water Heaters; and 24 models of Industrial Heavy Oil Burners.

A subsidiary of the world's largest oil company, Gilbert & Barker Mfg. Company occupies the enviable position of having more experience and knowledge of oil and oil burning equipment than any other manufacturer in the industry. The efficiency and dependability of Gilbert & Barker equipment has brought the Company to unquestioned leadership in its field. This leadership is just as pronounced abroad as it is in America. Gilbert & Barker Oil Burners are rendering satisfactory performance in England, France, Argentina, Norway, Sweden, Switzerland, Denmark, Rumania, Brazil, and other foreign countries. You can specify Gilbert & Barker equipment with complete confidence in the product and the company which stands squarely behind it.

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We reserve the right to change all specifications herein without notice or liability

GILBERT & BARKER MANUFACTURING COMPANY

SPRINGFIELD, MASSACHUSETTS, U. S. A.

NEW YORK, CHICAGO,
TORONTO, LONDON, SYDNEY

●

Sold and Installed by authorized dealers throughout the United States
and by Esso Marketers in the following markets:

BOSTON, MASSACHUSETTS METROPOLITAN NEW YORK EASTERN PENNSYLVANIA
NEW JERSEY MARYLAND DELAWARE NORTH CAROLINA
VIRGINIA WASHINGTON, D. C.

Form 0167A 3413

Printed in U. S. A.

GENERAL SUGGESTIONS FOR

ARCHITECTS' CONSIDERATION IN PLANNING NEW HOUSES

Space for Heating Unit

The space provided for the heating unit should be of such size that there is at least a 2-foot clearance on all sides of the unit. More space is desirable. The space required for an air conditioning unit is greater than that required for a steam or hot water boiler. Our tables of overall dimensions will assist in determining boiler or furnace sizes.

Chimney Size

The best operation is assured if only one heating unit is connected to one flue. The chimney height is not as important as having the chimney extend at least 2 feet above the highest surrounding point of the building or any adjacent obstruction liable to affect the draft. Boiler and Furnace Manufacturers' catalogs should be referred to for chimney sizes. The following table may be used as a guide in specifying chimney sizes:

MAXIMUM LOADS AND MINIMUM CHIMNEY SIZES

For Commercial Sizes of Flue Tile

HEATING LOAD			MINIMUM FOR TILE LINED CHIMNEYS			
			RECTANGULAR TILE		ROUND	
U. S. G. P. H.	Sq. Ft. Steam (Gross)	Sq. Ft. H. W. (Gross)	Nominal Dimension (Outside) Inches	Actual Dimension (Inside) Inches	Actual Dimension (Inside) Inches	Min. Height Feet
1.65	600	960	8½ x 8½	7¼ x 7¼	8	26
2.50	940	1500	8½ x 13	7 x 11½	10	30
4.00	1560	2500	13 x 13	11¼ x 11¼	12	35
5.50	2150	3440	13 x 18	11¼ x 16¼	—	40
6.50	2550	4080	——	——	15	45
8.00	3200	5120	18 x 18	15¾ x 15¾	—	50
10.00	4000	6400	20 x 20	17¼ x 17¼	18	55
12.50	5000	8000	20 x 24	17 x 21	—	60
15.00	6000	9600	——	——	22	65
17.00	6800	10880	24 x 24	21 x 21	—	65
20.00	8000	12800	——	——	24	70
21.00	8400	13440	——	*24 x 24	—	70
25.00	10000	16000	——	*24 x 28	26	75

* — These dimensions are for unlined rectangular flues.

Location of the Thermostat

Careful attention should always be paid to the location of the thermostat. It should never be placed directly over or very close to a radiator or register. Neither should it be placed on the wall near a chimney, nor near a window or outside door. In addition to the foregoing, the thermostat should never be located over or near a warm air duct, nor hot water or steam pipes which pass through the wall.

Usually, it should be located in the room that is used the most. It should be located from 3 to 5 feet above the floor.

To avoid the necessity of cutting the wall after it has been decorated we recommend, in new construction, that a neat wood panel in keeping with the general decorative scheme be provided on which to mount the thermostat. A conduit should also be provided from the panel to the basement through which the thermostat wire can be run. The size of the wood panel depends on the type of thermostat.

Location of Fill and Vent Lines

The filling point should be located adjacent to driveways or curbs. The fill point should be higher than the top of the tank. Otherwise it is necessary to provide a tight connection between the fill pipe and fill hose and also to provide a check valve in the fill line. The vent line should be in an inconspicuous location and in sight of the fill point, if the fill is made through a tight connection between the fill line and fill hose.

Provide Pipe Openings Through Foundations

In new construction, pipe sleeves should be provided in the foundation for the fill and vent lines if the tank is to be an inside one, and for the suction and return lines if the tank is to be outside the building.

Fuel Storage Tank

Several factors usually govern the size of the fuel oil storage tank selected:

1. Installation cost.
2. Size of heating plant.
3. Reliability of fuel deliveries under adverse weather conditions.
4. Locations available.

A tank of adequate capacity should be selected. Standard tank capacities range from 275 gal. (inside) to 550 or 1000 gal. (underground) outside.

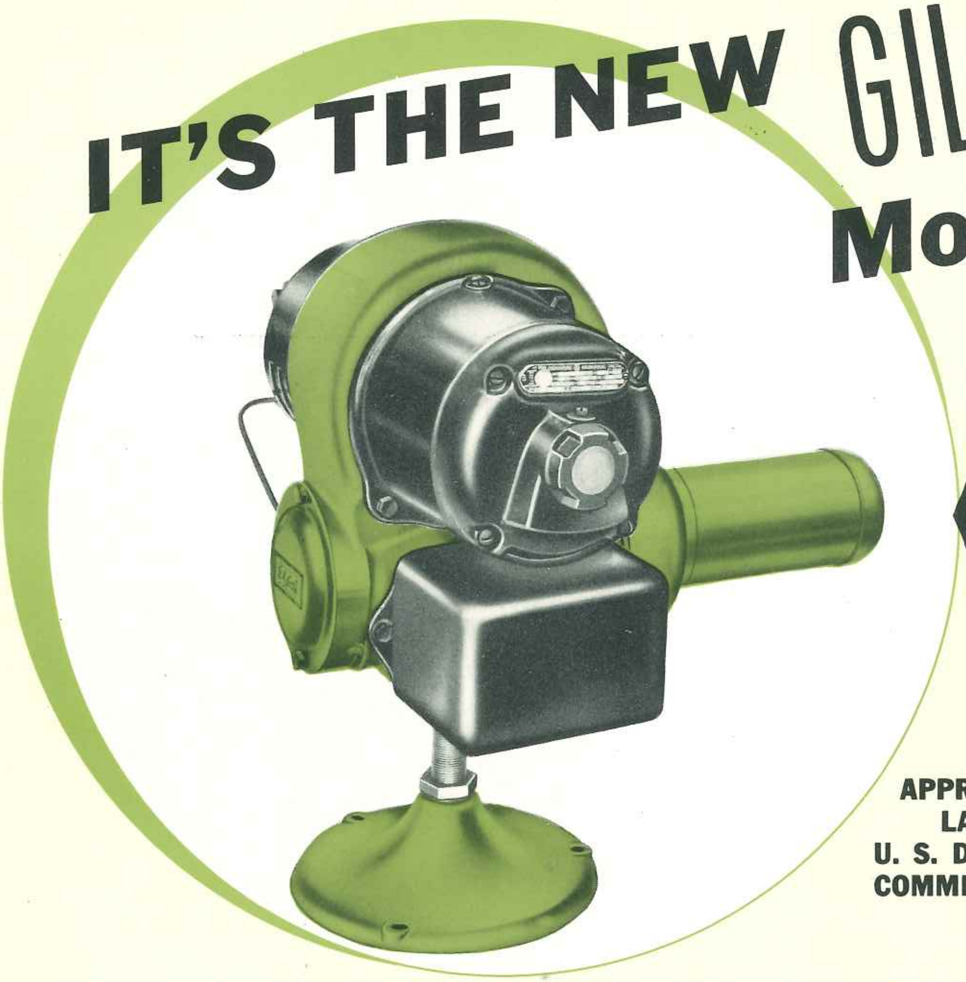
For heavy oil, the tank is generally governed by the minimum tank wagon or tank car capacity.

Experienced Engineers Available for Consultation

A staff of expert Oil Heating and Air Conditioning engineers is maintained who are always at the service of architects and heating contractors, for consultation on any unusual problem involving the proper use of oil heat.

Our interest is not limited to the sale of the equipment and our field engineers are always available for inspection of the final installation.

IT'S THE NEW GILBARCO Model GBS



Econ-O-flex

CONTROLLED COMBUSTION

APPROVED BY UNDERWRITERS' LABORATORIES, INC. AND U. S. DEPARTMENT OF COMMERCE COMMERCIAL STANDARDS CS-75-39

Never before has such QUALITY *been sold for so little!*

This *new* Oil Burner was designed and built for one purpose only — to solve in a new and better way the cost of heating problem . . . to make automatic oil heat the *best practicable way* to heat your home.

Obviously an Oil Burner designed for this purpose must first of all be inexpensive to purchase. *And the Model GBS is sold for the lowest price in this Company's long history.* Secondly, it must be highly efficient, for upon its efficiency depends the cost of its operation. *And the Model GBS is amazingly efficient.* Thirdly, an Oil Burner designed to solve the cost of heating problem must be as dependable as human ingenuity and manufacturing skill can make it. *And the Model GBS is wholly dependable.*

Low in first cost . . . low in operating cost . . . dependable . . . so efficient that it will heat your home with unexampled economy . . . product of the only Company in the industry which has behind it the research and manufacturing experience of more than fifty-two years of building oil burners — the Model GBS is by every standard the answer to *your* heating problem. BUY A MODEL GBS FOR YOUR HOME TODAY!

MOST HEAT PER DOLLAR

RATINGS AND SPECIFICATIONS

This is a fully automatic, pressure atomizing type oil burner for steam or hot water heating systems, warm air furnaces, winter air conditioners, domestic hot water heaters and special industrial uses.

APPROVALS: Underwriters' Laboratories, Inc., Commercial Standards CS-75-39; Mass. State Dept. of Public Safety; N. Y. Board of Standards and Appeals; State of Connecticut; City Fire Marshal, Philadelphia, etc.

RATING

		Capacity U.S. g.p.h.		Radiation	
Current	Motor Speed	Min.	Max.	Steam*	Hot† Water
AC 60 cycles	1750 r.p.m.‡	0.75	2.25	900	1440
AC 50 cycles	1450 r.p.m.	0.75	1.90	760	1210

*Based on 400 sq. ft. per gallon.
†Based on 640 sq. ft. per gallon.
‡Standard Burner

Not available for any other current characteristics than those shown here.

FUEL OIL

Approved by Underwriters' Laboratories, Inc. for No. 3 Fuel Oil in accordance with Dept. of Commerce, Commercial Standards CS-12-40

FUEL UNIT

Oil strainer, pump and pressure regulating valve combined in one unit

OIL STRAINER

Type: Cleanable cylinder screen
Material: Corrosion-resisting metal

PUMP

Type: Single-stage; internal gears; can also be furnished with 2-stage pump, at extra cost
Coupling: Flexible self-adjusting rubber coupling with splined connection on fan hub

PRESSURE REGULATING VALVE

Type: Single adjustment
Range: 75 — 150 lbs. per sq. in.

NOZZLE HOLDER

Type: Special "G & B" design
Material: Brass

MOTOR

Size: ⅛ H.P.
Type: Split phase, long hour duty; flange
Speed: 1750 R.P.M.
Built-in, thermally operated, manually reset, overload cutout
Snap action starting switch

ELECTRICAL DATA

Starting Current: 17.0 amps.
Running Current: 3.4
Total Wattage: At 100 lbs. per sq. in. oil pressure — 155 watts

TRANSFORMER

Number: One
Type: Continuous duty with mid-point of secondary grounded
Voltage: 10,000 volts
Amperage: 23 milliamperes (maximum)
Wattage: 75 watts

IGNITION

Type: Continuous electric
Electrodes: One set — special heat-resisting alloy; porcelain insulators
Cables: Triple insulated; snap-on connectors

RADIO FILTER

Special transformer has internal barrier to prevent radio interference

CONTROLS (LOW VOLTAGE)

Combustion Safety: Stack switch

FAN

Type: Multi-blade; forward curved, balanced
Size: 5¼″ diam. x 3 7/16″ wide; 32 floats
Material: Cadmium plated steel
Direct mounted on motor shaft

FAN HOUSING

Type: "G&B" design
Material: Cast iron (special fine-grained)

AIR SHUTTER

Type: Micro-adjustment; externally adjustable while burner is operating

AIR TUBE

Size: 3⅝″ diam. x 9″ long
Also available in 17″ length
Material: Heavy gauge steel

COMBUSTION HEAD

Type: Internal vane turbulator; single nozzle

MOUNTING

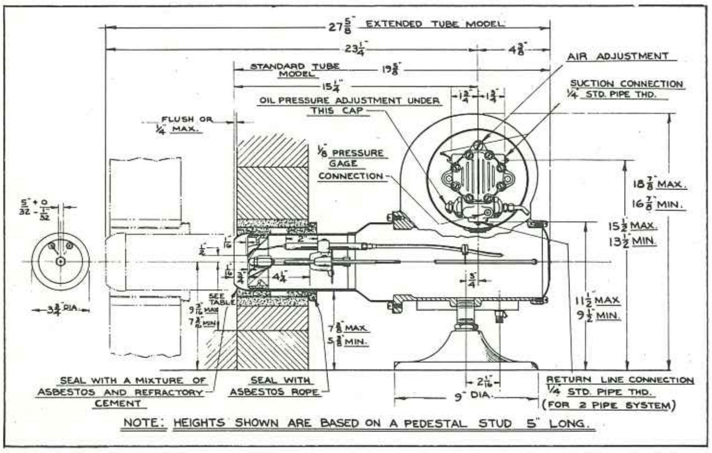
Type: Burner mounted on single cast-iron pedestal with adjustable stud

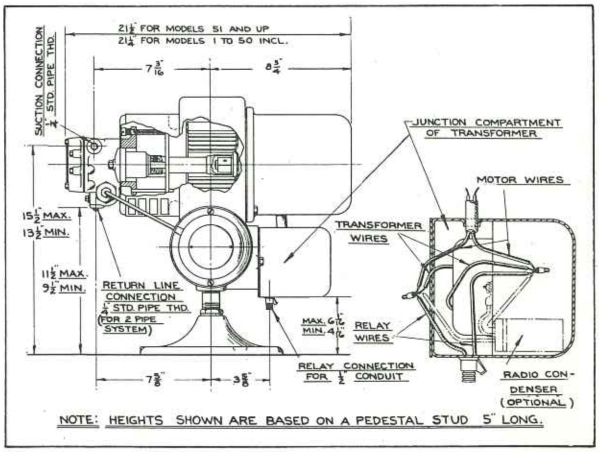
FINISH

Dark green enamel

WEIGHT — BURNER AND RELAY

95 lbs. in carton




SUCTION CONNECTION 1/4" STD. PIPE THD.
21 1/2" FOR MODELS 51 AND UP
21 1/4" FOR MODELS 1 TO 50 INCL.
7 3/16"
8 3/4"
JUNCTION COMPARTMENT OF TRANSFORMER
MOTOR WIRES
15 1/2" MAX.
13 1/2" MIN.
TRANSFORMER WIRES
11 1/2" MAX.
9 1/2" MIN.
RETURN LINE CONNECTION 1/4" STD. PIPE THD. (FOR 2 PIPE SYSTEM)
MAX. 6 1/16"
MIN. 4 1/16"
RELAY WIRES
RELAY CONNECTION FOR 1/2" CONDUIT
7 5/8"
3 5/8"
RADIO CONDENSER (OPTIONAL)
NOTE: HEIGHTS SHOWN ARE BASED ON A PEDESTAL STUD 5" LONG.

The manufacturer reserves the right to change ratings and specifications without notice or liability.

Manufactured by

GILBERT & BARKER MFG. COMPANY • Springfield, Mass., Toronto, Canada

Form O-216 3418

Printed in United States of America

● STYLED *for Striking Beauty* . . . .
● ENGINEERED *for Lasting Performance!*

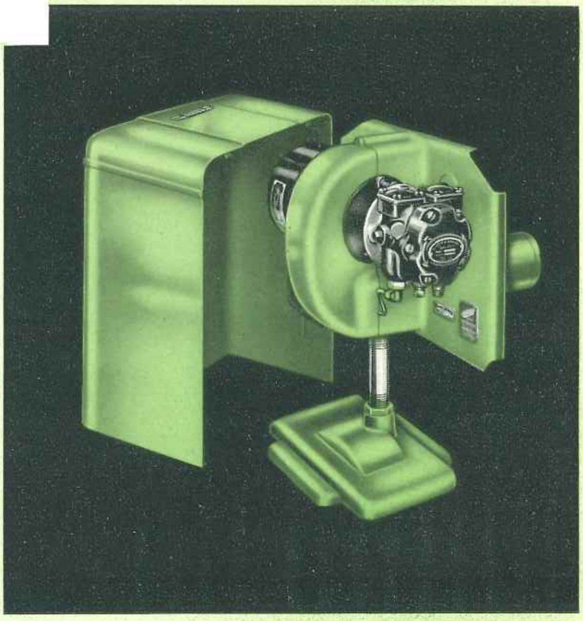
These two handsome oil burners are designed especially to heat—automatically, efficiently, dependably and economically—the homes in which most of America lives.

GILBARCO

MODELS GB-OO and GB-O1
OIL BURNERS

● Modern standards of living demand the healthful comfort and convenience of automatic oil heating—and now it can be had with these attractive models which provide both low first cost and low operating cost . . . well within the modest budget of the average home owner.

Products of years of research in home heating, they include every feature which has in the past been available only in more expensive models, and in addition they have the new beauty of integral burner cabinets finished in high gloss green enamel. In every way they are built to meet the most rigid standards of performance and appearance as well as of economy.



5

Econ-O-flex **CONTROLLED COMBUSTION MEANS MOST HEAT PER DOLLAR**

RATINGS AND SPECIFICATIONS

These are fully automatic, pressure atomizing type oil burners for steam heating systems, hot water heating systems, warm air furnaces, winter air conditioners, domestic hot water heaters and special industrial uses.

APPROVALS: Underwriters' Laboratories, Inc., Commercial Standards CS-75-39; Mass. State Dept. of Public Safety; N. Y. Board of Standards and Appeals; State of Connecticut; City Fire Marshal, Philadelphia, etc.

RATINGS

Current	Motor Speed	Capacity U. S. g.p.h. Min.	Capacity U. S. g.p.h. Max.	Radiation Steam*	Radiation Hot Water†
GB-OO					
AC 60 cycles	1750 r.p.m.**	0.75	2.00	800	1280
AC 50 “	1450 “	0.75	1.60	640	1025
GB-O1					
AC 60 cycles	1750 r.p.m.**	2.00	2.75	1100	1760
AC 50 “	1450 “	1.60	2.00	800	1280

**Based on 400 sq. ft. per gallon.*
†Based on 640 sq. ft. per gallon.
***Standard burner.*

Not available for any other current characteristics or speeds than those shown here.

FUEL OIL

Approved by Underwriters' Laboratories, Inc. for No. 3 Fuel Oil in accordance with Commercial Standards CS-12-40 Dept. of Commerce. Lighter oils can also be burned

FUEL UNIT

Oil strainer, pump and pressure regulating valve combined in one unit

OIL STRAINER

Type: Cleanable multi-cylinder screens
Material: Corrosion-resisting metal
Auxiliary 120 mesh Monel Metal strainer in nozzle holder

PUMP

Type: Single-stage (standard)*; helical involute gears; integral shaft
**Can be furnished with two-stage pump at extra cost.*
Coupling: Flexible self-adjusting rubber coupling with splined connection on fan hub

PRESSURE REGULATING VALVE

Type: Single adjustment; bellows-actuated double-ended needle valve
Range: 75—150 lbs. per sq. in.

NOZZLE HOLDER

Type: Exclusive "G&B" design with large mass (Patented)
Material: Brass

MOTOR

Size: 1/12 H.P.
Type: Split phase, long hour duty; foot mounted
Speed: 1750 R.P.M.
Built-in, thermally operated, manually reset, overload cutout
Snap action switch and brush assembly

ELECTRICAL DATA

Starting Current: 19.0 Amps.
Running Current: 4.3 Amps.
Total Wattage: At 100 lbs. per sq. in. oil pressure — GB-OO 170 watts; GB-O1 185 watts

TRANSFORMER

Number: One
Type: Continuous duty with mid-point of secondary grounded
Voltage: 10,000 volts
Amperage: 23 milliamperes (maximum)
Wattage: 75 watts

IGNITION

Type: Continuous electric
Electrodes: One set—special heat-resisting alloy; porcelain insulators
Cables: Triple insulated; snap-on connectors; porcelain supports

RADIO INTERFERENCE ELIMINATOR

Transformer has internal barrier to prevent radio interference.

CONTROLS (LOW VOLTAGE)

Combustion Safety: Stack switch
Operating: As ordered (Thermostat, Aquastat, Pressure Control, etc., to meet individual requirements)

FAN

Type: Multi-blade; forward curved, balanced
Size: GB-OO 4¾″ diam. x 2⅞″ wide
GB-O1 5¼″ diam. x 2⅞″ wide
Material: Cadmium plated steel
Direct mounted on motor shaft

FAN HOUSING

Type: "G&B" design
Material: Cast iron (special fine-grained)

AIR SHUTTER

Type: Micro-adjustment; externally adjustable while burner is operating

AIR TUBE

Size: 3⅝″ diam. x 9″ long
Also available in 17″ length
Material: Heavy gage steel with special Resistal cone

COMBUSTION HEAD

Type: Internal vane turbulator; single nozzle
Cast iron

MOUNTING

Type: Working parts panel-mounted on cast-iron frame
Burner mounted on single cast-iron pedestal with adjustable stud

CABINET

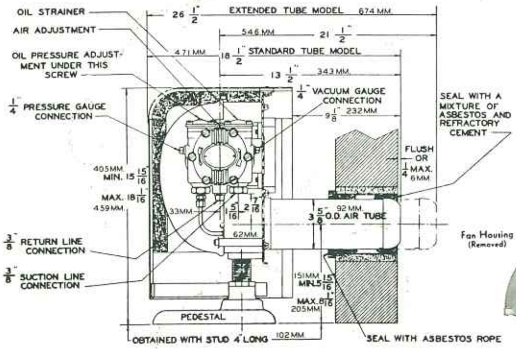
Enclosure of heavy gage steel protects burner

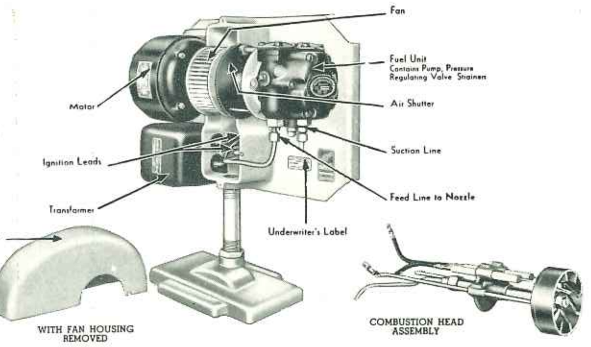
FINISH

Smooth gloss green enamel

APPROXIMATE SHIPPING WEIGHT

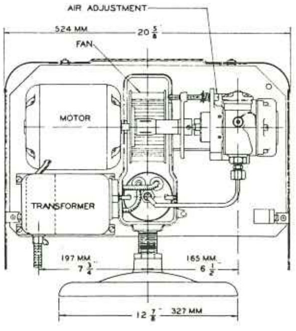
Burner and Relay—130 lbs.


OIL STRAINER
AIR ADJUSTMENT
OIL PRESSURE ADJUSTMENT UNDER THIS SCREW
1/4" PRESSURE GAUGE CONNECTION
3/8" RETURN LINE CONNECTION
3/8" SUCTION LINE CONNECTION
26 1/2" EXTENDED TUBE MODEL 674 MM.
546 MM 21 1/2"
471 MM 18 1/2" STANDARD TUBE MODEL
13 1/2" 343 MM.
1/4" VACUUM GAUGE CONNECTION
9 1/8" 232 MM
SEAL WITH A MIXTURE OF ASBESTOS AND REFRACTORY CEMENT
FLUSH OR 1/4 MAX. 6 MM
405 MM. MIN. 15 15/16
MAX. 18 1/16
459 MM.
33 MM.
1 5/16
2 7/16
62 MM.
3 5/8" 92 MM. O.D. AIR TUBE
151 MM MIN. 5 15/16
MAX. 8 1/16
205 MM
PEDESTAL
OBTAINED WITH STUD 4" LONG 102 MM
SEAL WITH ASBESTOS ROPE



WITH FAN HOUSING REMOVED

COMBUSTION HEAD ASSEMBLY



The manufacturer reserves the right to change ratings and specifications without notice or liability.

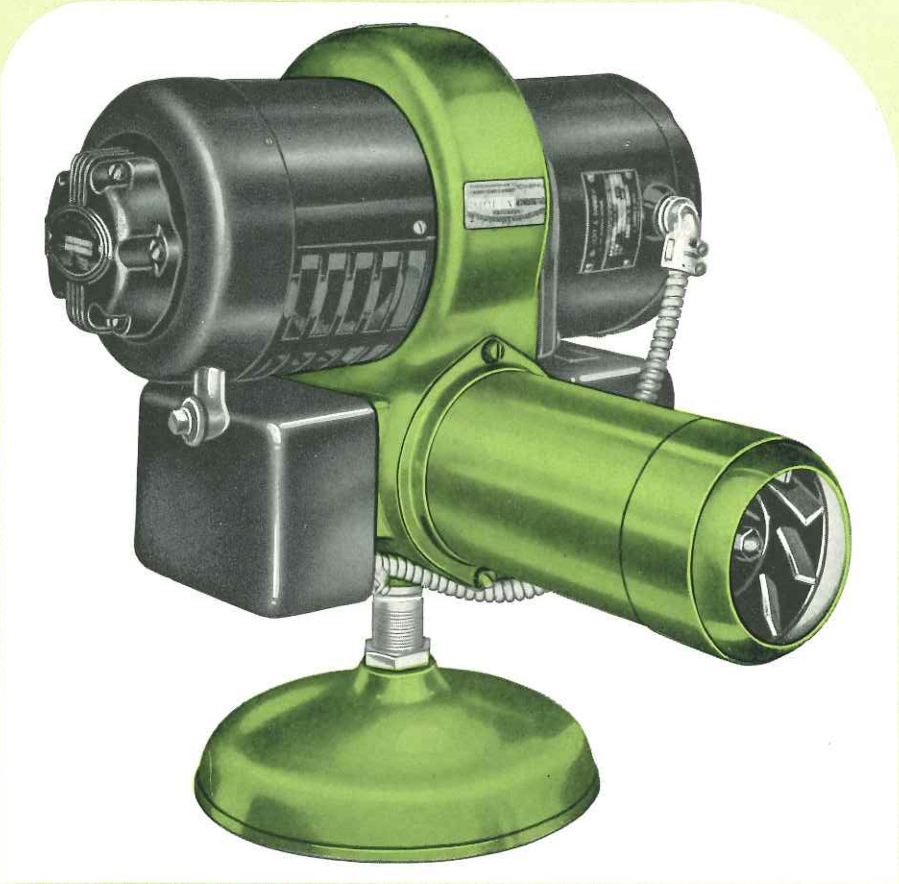
Manufactured by
GILBERT & BARKER MFG. COMPANY • Springfield, Mass., Toronto, Canada

Printed in United States of America

The Quality Burner

Occupants of medium-sized to large homes of eight to ten rooms can turn over their heating problems to this sturdy oil burner and then dismiss them from their minds. Day and night this burner will be on the job, caring for their health and comfort—automatically, dependably, efficiently and economically, this year, next year and in years to come.

Gone will be the dust, grime, and variable temperatures of old fashioned methods of firing. And the space in the basement formerly occupied by cumbersome bins and barrels can be used for a basement recreation room — adding to the ease and pleasure of modern living and entertaining. Here is an inexpensive method of adding a usable room to your home—and at the same time obtaining new heating comfort and convenience.



Econ-O-flex

Efficient combustion is an essential of economical oil heating—and for efficient combustion the flame must fit the fire box. With Econ-O-flex Controlled Combustion the flame can be tailored to fit the shape of your boiler or furnace, regardless of whether the combustion chamber is circular, rectangular or square. That is why Econ-O-flex Controlled Combustion means MOST HEAT PER DOLLAR!

GILBARCO

MODEL GB1

OIL BURNER

Behind this oil burner is a manufacturer with more than seventy-five years of experience in building liquid fuel combustion equipment—a pioneer whose leadership in research, development and manufacture is today more than ever outstanding.

7

MOST HEAT PER DOLLAR

RATINGS AND SPECIFICATIONS

The GB1 is a fully automatic, pressure atomizing type oil burner for steam heating systems, hot water heating systems, warm air furnaces, winter air conditioners, domestic hot water heaters and special industrial uses.

APPROVALS: Underwriters' Laboratories, Inc.; Commercial Standards CS-75-39; Mass. State Dept. of Public Safety; N. Y. Board of Standards and Appeals; State of Connecticut; City Fire Marshal, Philadelphia; Hydro Electric of Canada, etc.

RATINGS

Current	Motor Speed	Maximum Capacity U.S. Gals.	Radiation Steam*	Radiation Hot† Water
DC	1800 r.p.m.	3.5 g.p.h.	1400	2240
AC 60 cycles	1750 "**	3.5 "	1400	2240
AC 60 "	1150 "	2.1 "	840	1345
AC 50 "	1450 "	2.6 "	1040	1665
AC 40 "	1150 "	2.1 "	840	1345
AC 25 "	1450 "	2.6 "	1040	1665

**Based on 400 sq. ft. per gal.*
†Based on 640 sq. ft. per gal.

**Standard Model—110 volt, 60 cycles. Available for other voltages and frequencies. Minimum recommended rate for all motor speeds 1.65 g.p.h. Capacity— Flat Flame Head—approximately 20% less than shown in above table.

FUEL OIL

Approved by Underwriters' Laboratories, Inc. for No. 3 Fuel Oil in accordance with Commercial Standards CS-12-40 Dept. of Commerce.

FUEL UNIT

Oil strainer, pump and pressure regulating valve combined in one unit

OIL STRAINER

TYPE: Cleanable multi-cylinder screens
MATERIAL: Corrosion-resisting metal
Auxiliary 80 mesh Monel Metal strainer in nozzle holder

PUMP

TYPE: Two-stage; helical involute gears; integral shaft
COUPLING: Flexible self-adjusting rubber coupling with splined connection on fan hub

PRESSURE REGULATING VALVE

TYPE: Single adjustment, bellows-actuated double-ended needle valve
RANGE: 75—150 lbs. per sq. in.

NOZZLE HOLDER

TYPE: Exclusive "G&B" design with large mass and "V" slot oil passage (Patented)
MATERIAL: Brass

MOTOR

SIZE: 1/12 H.P.
TYPE: Split phase, long hour duty; flange-mounted
SPEED: 1750 R.P.M. on 60 cycle A. C.
Built-in, thermally operated, manually reset overload cut-out. Snap action switch and brush assembly.

ELECTRICAL DATA

STARTING CURRENT: 18.0 Amps.
RUNNING CURRENT: 4.2 Amps.
TOTAL WATTAGE: 170 Watts at 100 lbs. per sq. in. oil pressure

TRANSFORMER

NUMBER: One
TYPE: Continuous duty with mid-point of secondary grounded
VOLTAGE: 10,000 volts
AMPERAGE: 23 milliamperes (maximum)
WATTAGE: 65 watts

IGNITION

TYPE: Continuous electric
ELECTRODES: One set—special heat-resisting alloy; porcelain insulators
CABLES: Triple insulated; snap-on connectors; porcelain supports

RADIO FILTER

Plate Condenser Filter, mounted in junction box on burner
Transformer also has internal barrier to prevent radio interference

CONTROLS (LOW VOLTAGE)

COMBUSTION SAFETY: Stack switch
OPERATING: As ordered (Thermostat, Aquastat, etc., to meet individual requirements)

FAN

TYPE: Multi-blade, forward curved, balanced
SIZE: 6⅛" diam. x 2 13/32" wide; 45 floats
MATERIAL: Aluminum alloy
Direct mounted on motor shaft

FAN HOUSING

TYPE: Special "G&B" design
MATERIAL: Cast iron (special fine-grained)

AIR SHUTTER

TYPE: Micro-adjustment; externally adjustable while burner is operating

AIR TUBE

SIZE: 4⅝" diam. x 9½" long
Also available in 18⅛" length
MATERIAL: Heavy gage steel with special Resistal cone and band

COMBUSTION HEAD

TYPE: Internal vane turbulator with adjustable air diffuser cone. "Flat Flame" head also available. Single nozzle
MATERIAL: Cast iron

MOUNTING

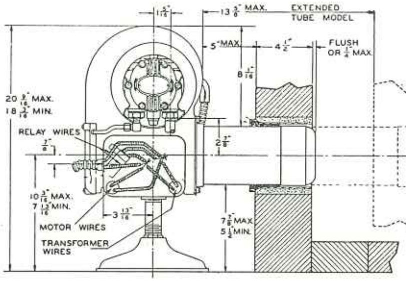
TYPE: Single pedestal; adjustable stud
MATERIAL: Cast-iron base

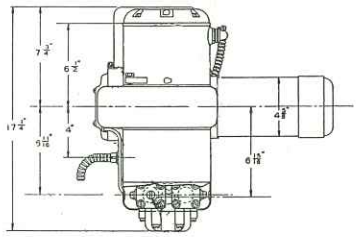
FINISH

COLORS: Smooth gloss green and black enamel

WEIGHT—BURNER AND RELAY

Crated 145 lbs.





The manufacturer reserves the right to change specifications and ratings without notice or liability.

Manufactured by
GILBERT & BARKER MFG. COMPANY • Springfield, Mass., Toronto, Canada

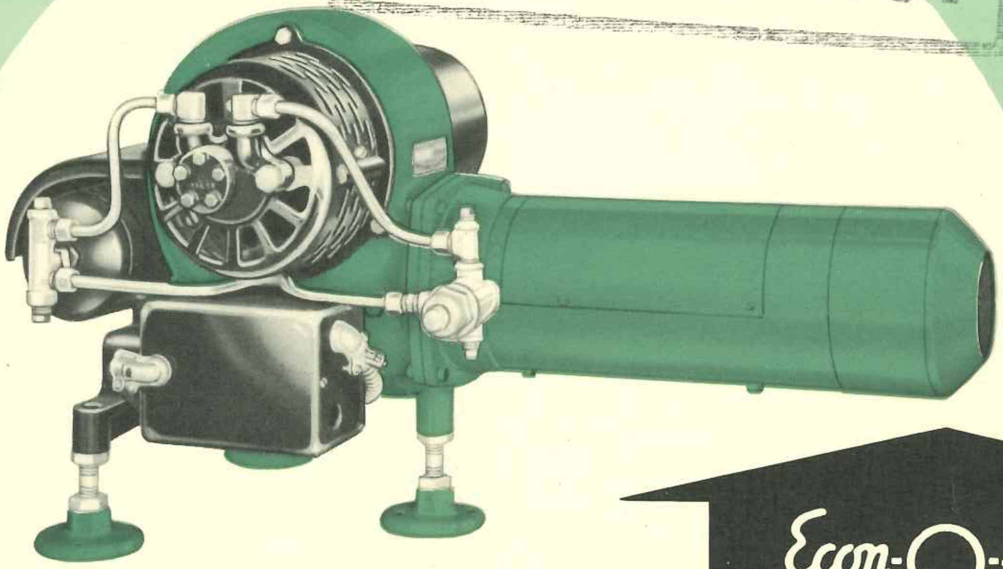
Form O-171A 1415

Printed in United States of America

Precision-built ... FOR ECONOMICAL HEATING

PATENT OFFICE
MAR 9 1943
Design Division

RETURN TO
DESIGN DIV.



Econ-O-flex

Efficient combustion is an essential of economical oil heating—and for efficient combustion the flame must fit the fire box. With Econ-O-flex Controlled Combustion the flame can be tailored to fit the shape of your boiler or furnace, regardless of whether the combustion chamber is circular, rectangular or square. That is why Econ-O-flex Controlled Combustion means . . . MOST HEAT PER DOLLAR!

Dependability is the foremost requirement in an oil burner designed for heating large homes, estates, small apartment houses or commercial buildings of similar size. In hundreds of installations throughout this country and in Europe this burner has established outstanding records for dependability—as well as for economy and durability.

In many cases where labor has been a factor in hand-firing costs this oil burner has paid for itself in wage savings alone in a surprisingly short period of time—as well as providing even, automatic heat with noteworthy economy in fuel consumption.

GILBARCO

MODEL GB2

OIL BURNER

MOST HEAT PER DOLLAR

RATINGS AND SPECIFICATIONS

The GB2 is a fully automatic, pressure atomizing type oil burner for steam heating systems, hot water heating systems, warm air furnaces, winter air conditioners, domestic hot water heaters and special industrial uses.

APPROVALS: Underwriters' Laboratories, Inc.; Commercial Standards CS-75-39; Mass. State Dept. of Public Safety; N. Y. Board of Standards and Appeals; State of Connecticut; City Fire Marshal, Philadelphia; Hydro Electric of Canada, etc.

RATINGS

Current	Motor Speed	Maximum Capacity U.S. Gals.	Radiation Steam*	Radiation Hot† Water
DC	1800 r.p.m.	5.5	2200	3520
AC 60 cycles	1750 "**	5.5	2200	3520
AC 60 "	1150 "	4.0	1600	2560
AC 50 "	1450 "	5.0	2000	3200
AC 40 "	1150 "	4.0	1600	2560
AC 25 "	1450 "	5.0	2000	3200

**Based on 400 sq. ft. per gal.*
†Based on 640 sq. ft. per gal.

**Standard Model—110 volt, 60 cycles. Available for other voltages and frequencies. Minimum recommended rate for all motor speeds 3.5 g. p. h. Capacity—Flat Flame Head—approximately 20% less than shown in above table.

FUEL OIL

Approved by Underwriters' Laboratories, Inc. for No. 3 Fuel Oil in accordance with Commercial Standards CS-12-40 Dept. of Commerce.

OIL FILTER

Type: Sealed Cartridge Filter
Material: Cotton element, wire mesh support
Auxiliary 80 mesh Monel Metal strainer in nozzle holder

PUMP

Type: Rotary gear; integral shaft
Coupling: Flexible; self-aligning rubber coupling

PRESSURE REGULATING VALVE

Type: Single adjustment, bellows-actuated double-ended needle valve
Range: 75—150 lbs. per sq. in.

NOZZLE HOLDER

Type: Exclusive "G&B" design with large mass and "V" slot oil passage (Patented)
Material: Brass

MOTOR

Size: 1/8 H.P.
Type: Split phase, long hour duty; flange-mounted
Speed: 1750 R.P.M. on 60 cycle A. C.
Built-in, thermally operated, manually reset overload cut-out
Snap action switch and brush assembly

ELECTRICAL DATA

Starting Current: 18.5 Amps.
Running Current: 4.6 Amps.
Total Wattage: 240 Watts at 100 lbs. per sq. in. oil pressure

TRANSFORMER

Number: One
Type: Continuous duty with mid-point of secondary grounded
Voltage: 10,000 volts
Amperage: 23 milliamperes (maximum)
Wattage: 70 watts

IGNITION

Type: Continuous electric
Electrodes: One set—special heat-resisting alloy; porcelain insulators
Cables: Triple insulated; snap-on connectors; porcelain supports

RADIO FILTER

Transformer has internal barrier to prevent radio interference

CONTROLS (LOW VOLTAGE)

Combustion Safety: Stack switch
Operating: As ordered (Thermostat, Aquastat, etc., to meet individual requirements)

FAN

Type: Multi-blade, forward curved, balanced
Size: 6 13/16" diam. x 3" wide; 36 floats
Material: Fabricated steel
Direct mounted on motor shaft

FAN HOUSING

Type: "G&B" design
Material: Cast iron (special fine-grained)

AIR SHUTTER

Type: Micro-adjustment; externally adjustable while burner is operating

AIR TUBE

Size: 5 11/16" diam. x 18 15/16" long
Also available in 26 15/16" length
Material: Heavy gage steel with special Resistal cone and band

COMBUSTION HEAD

Type: Internal vane turbulator with air concentrator
"Flat Flame" Head also available. Single nozzle
Material: Cast iron

MOUNTING

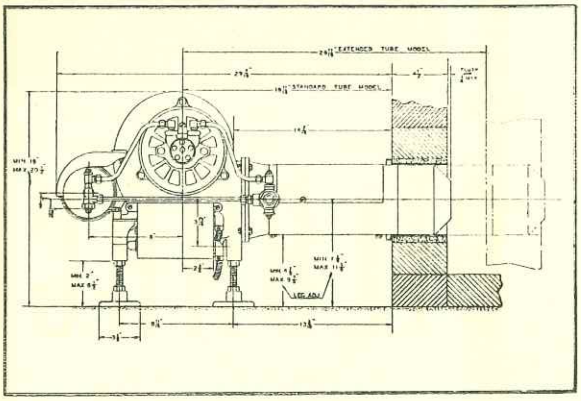
Type: Three adjustable legs with cast-iron feet

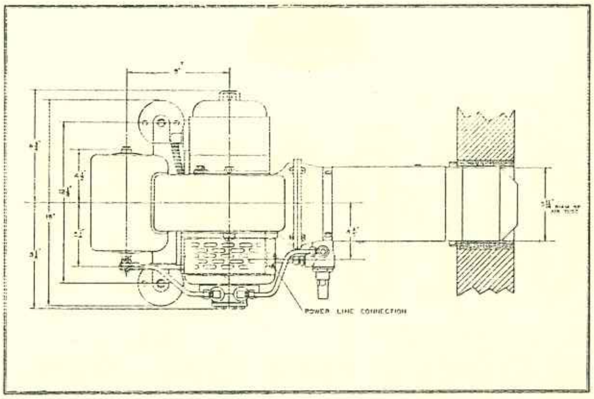
FINISH

Colors: Smooth gloss green and black enamel

WEIGHT—BURNER AND RELAY

Crated 175 lbs





The manufacturer reserves the right to change specifications and ratings without notice or liability.

Manufactured by
GILBERT & BARKER MFG. COMPANY • Springfield, Mass., Toronto, Canada

Form O-174A 10412

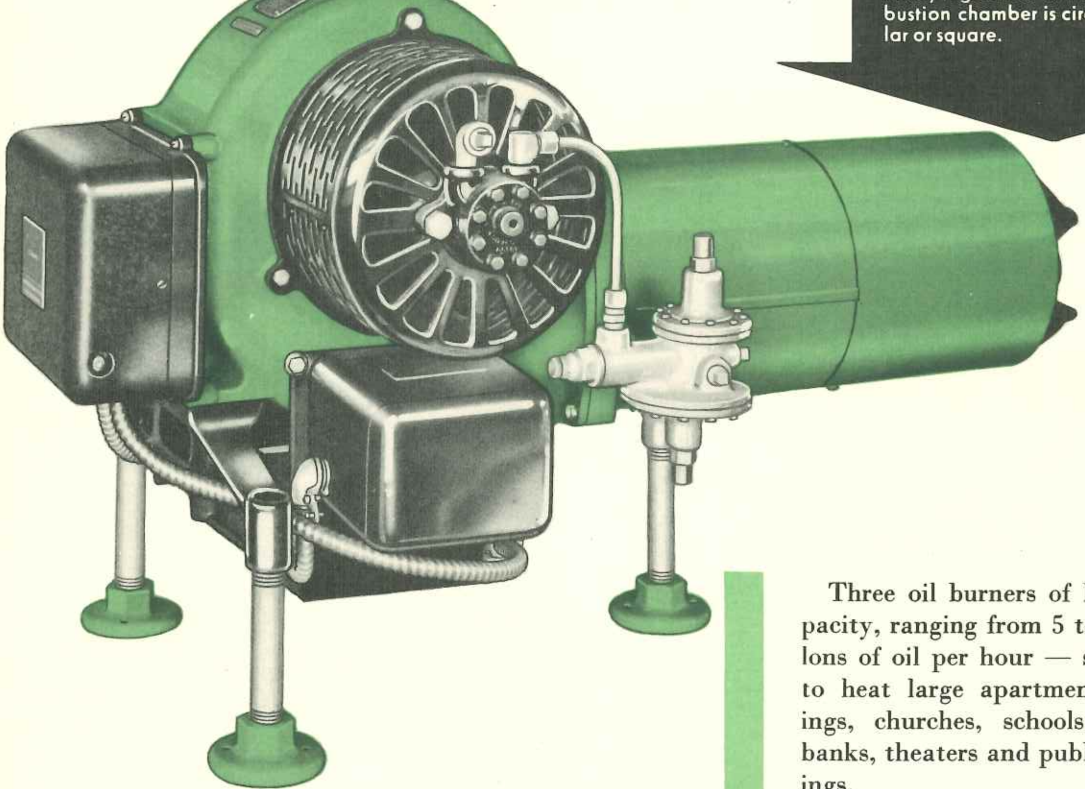
Printed in United States of America

Dependable, Efficient Heating

FOR APARTMENT HOUSES AND COMMERCIAL BUILDINGS

Econ-O-flex

Efficient combustion is an essential of economical oil heating—and for efficient combustion the flame must fit the fire box. With Econ-O-flex Controlled Combustion the flame can be tailored to fit the shape of your boiler or furnace, regardless of whether the combustion chamber is circular, rectangular or square.



GILBARCO

MODELS GB3 GB4 GB5

OIL BURNERS

Three oil burners of large capacity, ranging from 5 to 25 gallons of oil per hour — sufficient to heat large apartment buildings, churches, schools, stores, banks, theaters and public buildings.

These burners are designed to maintain a high standard of operating efficiency which is your assurance of economical heating. In many cases where the labor of hand firing has been a cost factor, these burners have paid for themselves in labor saving alone within a remarkably short time.

Completely automatic, rugged and highly dependable, these three burners can be relied upon to provide years of low-cost heating operation.

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GILBERT & BARKER MFG. CO., WEST SPRINGFIELD, MASS. TORONTO, CANADA

RATINGS AND SPECIFICATIONS OF MODELS GB3, GB4 and GB5

These are fully automatic, pressure atomizing type oil burners for steam heating systems, hot water heating systems, warm air furnaces, winter air conditioners, domestic or service hot water heaters, and special industrial uses.

APPROVALS: Underwriters' Laboratories, Inc.; Commercial Standards CS-75-39; Mass. State Dept. of Public Safety; N. Y. Board of Standards and Appeals; State of Connecticut; City Fire Marshal, Philadelphia; Hydro Electric of Canada, etc.

RATINGS

Current	Motor Speed	Maximum Capacity U. S. Gals.	Radiation	
			Steam*	Hot Water†
		GB3		
DC	1800 r.p.m.	10.0 g.p.h.	4000	6400
AC 60 cycles	1750 " **	10.0 "	4000	6400
		GB4		
DC	1800 r.p.m.	14.0 g.p.h.	5600	8960
AC 60 cycles	1750 " **	14.0 "	5600	8960
		GB5		
DC	1800 r.p.m.	25.0 g.p.h.	10000	16000
AC 60 cycles	1750 " **	25.0 "	10000	16000

*Based on 400 sq. ft. per gallon

†Based on 640 sq. ft. per gallon

**Standard Model — 110 volt, 60 cycles, single phase. Also available for other voltages and frequencies. Minimum recommended rate for all motor speeds: GB3 5.0 g.p.h.; GB4 9.0 g.p.h.; GB5 12.0 g.p.h.

FUEL OIL: Approved by Underwriters' Laboratories, Inc. for No. 3 Fuel Oil in accordance with Commercial Standards CS-12-40 Dept. of Commerce.

OIL FILTER: Cleanable filter in removable sump. Cotton element, wire mesh support. Auxiliary 80 mesh monel metal strainer in nozzle holder.

PUMP: Rotary gear; integral shaft. Flexible self-aligning rubber coupling.

PRESSURE REGULATING VALVE: Dual adjustment, diaphragm-actuated needle valves. Range 75-250 lbs. per sq. in.

NOZZLE HOLDER: Brass, of exclusive "G & B" design, with large mass and "V" slot oil passage (Patented).

MOTOR: GB3 — 1/6 H.P. split phase, long hour duty, flange-mounted; GB4 — ¼ H.P. capacitor start and run, long hour duty, flange-mounted

GB5 — ⅓ H.P. capacitor start and run, long hour duty, flange-mounted

Speed, 1750 R.P.M. on 60 cycle A.C. Built-in, thermally operated, manually reset overload cut-out. Snap action switch and brush assembly

ELECTRICAL DATA: GB3 running current 4.7 Amps.
Total Wattage 270 Watts at 100 lbs. per sq. in. oil pressure
GB4 running current 8.9 Amps.
Total Wattage 550 Watts at 100 lbs. per sq. in. oil pressure
GB5 running current 9.1 Amps.
Total Wattage 580 Watts at 100 lbs. per sq. in. oil pressure

TRANSFORMERS:

	GB3	GB4	GB5
Number	One	Two	Two
Voltage	10,000	10,000	10,000
Max. Amperage	23 milliamperes	23 milliamperes	23 milliamperes
Wattage	80	190 total	190 total

Transformers are heavy duty with mid-point of secondary grounded

IGNITION

Type: Continuous electric
Electrodes: Special heat-resisting alloy; porcelain insulators. GB3 has one set. GB4 and GB5 have two sets
Cables: Triple insulated; Snap-on connectors; porcelain supports

RADIO INTERFERENCE ELIMINATOR

Suppressor mounted on burner
Transformers also have internal barriers to prevent radio interference

CONTROLS (Low Voltage)

Combustion Safety: Burner mounted relay and protectostat
Operating: As ordered (Thermostat, Aquastat, etc., to meet individual requirements)

FAN

GB3
Type: Multi-blade, forward curved, balanced
Size: 7½″ diam. x 3¼″ wide; 60 floats
Material: Fabricated steel
Direct mounted on motor shaft

GB4
Type: Multi-blade, forward curved, balanced
Size: 9″ diam. x 3⅞″ wide; 59 floats
Material: Alloy; fabricated
Direct mounted on motor shaft

GB5
Type: Multi-blade, forward curved, balanced
Size: 9″ diam. x 4¼″ wide; 60 floats
Material: Fabricated steel
Direct mounted on motor shaft

FAN HOUSING

Type: "G&B" Design
Material: Cast-iron (special fine-grained)

AIR SHUTTER

Type: Micro-adjustment; externally adjustable while burner is operating

AIR TUBE

GB3
Size: 6¾″ diam. x 15⅝″ long
Also available in 27⅛″ length
Material: Heavy gage steel

GB4 and GB5
Size: 8½″ diam. x 19¾″ long
Also available in 29¾″ length
Material: Heavy gage steel

COMBUSTION HEAD

GB3
Type: Flat Flame-Twin nozzles
Flat Flame single nozzle head also available
Material: Nickel chromium cast iron

GB4 and GB5
Type: Flat Flame-Twin nozzles
Material: Nickel chromium cast iron

FINISH

Smooth gloss green and black enamel

WEIGHTS — Burner and Relay

GB3 crated	GB4 crated	GB5 crated
200 lbs.	345 lbs.	350 lbs.

DIMENSIONS

MODEL NUMBER	GB3	GB4 GB5
Overall burner length* (standard model)	31″	36⅞″
Overall burner length* (extended model)	42½″	47⅜″
Service clearance required at rear of burner (standard)	6″	6″
" " " " " " " (extended)	6″	6″
Width center line to motor side	9⅛″	11¼″
Width center line to pump side	13″†	15¾″†
Overall width	22⅛″†	27″†
Air Tube Diam.	6¾″	8½″
Min. Height Floor to Center Line Air Tube	7⅛″	13⅛″
Max. " " " " " " "	9⅜″	16⅜″
Min. Overall Height	16″	23⅞″
Max. " "	18¼″	27⅛″

*In figuring for external clearances allow 4½″ for entrance of air tube into refractory wall.

†Can be reduced by 4″ if oil filter is mounted remotely.

We reserve the right to change specifications and ratings without notice or liability.

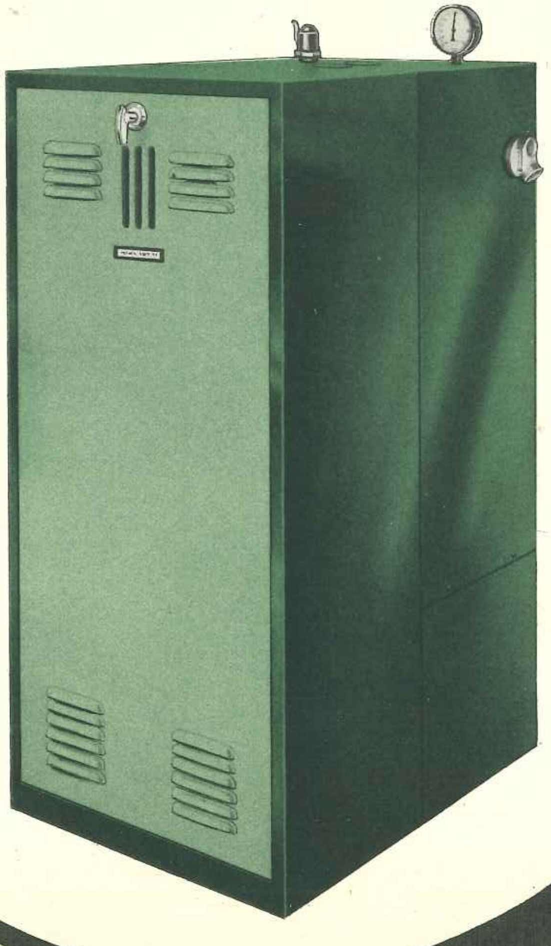
Printed in United States of America

Gilbarco

Series C Oil-Fired

BOILER UNITS

Automatic
Economical
Efficient
Compact
Durable
Dependable



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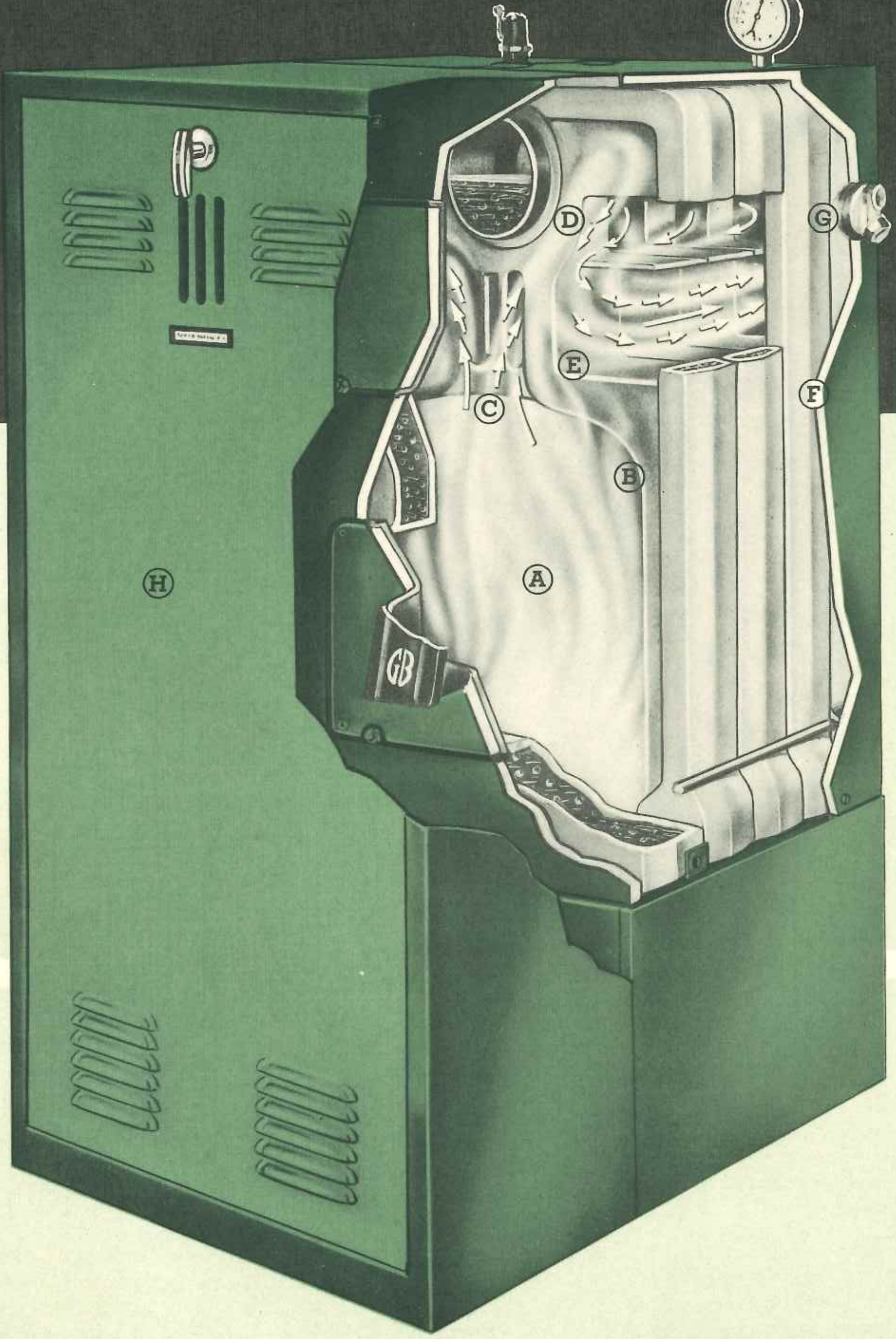
THE INSIDE STORY OF THE NEW OIL



Into the production of Gilbarco Series "C" Oil-fired Boiler Units has been put all the cumulated knowledge gained by the research and actual hard-won field experience of a Company which has been manufacturing oil heating equipment for more than fifty years.

These Boiler Units are low in first cost. — But first cost alone is not the criterion by which heating equipment should be judged. There is the matter of operating expense. And there is the matter of maintenance expense throughout the years. First cost . . . plus operating cost . . . plus maintenance expense — it is from these THREE factors that the true value of any piece of heating equipment must be determined.

It is not alone on low first cost — not alone on low operating cost — not alone on freedom from maintenance expense, but on all THREE that your consideration of these Boiler Units is invited.

FIRED "C" BOILER UNIT

FOR LOW COST STEAM, HOT WATER OR VAPOR HEATING

Most boilers for domestic use fall into one of two classes — the storage type, or the rapid-steaming flash type. Both have great advantages, with accompanying disadvantages. The flash boiler heats rapidly from a cold start because it contains a relatively small quantity of water. The storage boiler contains much more water and therefore heats more slowly. However, because of its greater water content it retains the heat far longer.

The new Gilbarco Series "C" Boiler is a combination of the rapid-steaming and storage type of boilers. In this Boiler the advantages of both are retained, but their disadvantages are eliminated.

The Series "C" Boiler holds a relatively small quantity of water in the small waterways which are exposed both to the radiant heat of the burner flame and the heat of the gases. Thus the Boiler heats quickly. Heating contractors of long experience declare its pick-up is far faster than any other boiler they have ever installed. But at the same time the Series "C" maintains the advantage of storage type boilers in having sufficient water leg capacity to retain its heat.

The Series "C" is a cast iron boiler, for of all materials used in boiler construction, none surpasses cast iron in efficiency, durability and long life. Cast iron best withstands the strains of constant expansion and contraction brought about by alternate periods of heating and cooling. It best withstands the corrosion frequently caused by impurities in water. And most important, cast iron can be formed into the intricate shapes necessary to extract the last penny's worth of heat from each gallon of fuel.

The combustion chamber (A) of the Series "C" Boiler is large, to permit the oil to be burned completely and to eliminate combustion noise and rumble. A large proportion of the primary heating surfaces (B) are exposed to direct heat of the flame, making for rapid and efficient heat transfer. Employing the semi-filter principle, the gases rise between each section (C), permitting the gases to come into direct contact with the secondary heating surfaces. As the gases rise and pass between the sections, they enter the upper gallery (D), come forward and then drop to enter the lower gallery (E), where they again pass the length of the boiler before entering the smoke hood at the rear. This long and downward flue travel insures the gases being trapped within the boiler long enough to have the maximum amount of their heat extracted. The insulation (F), a thick Rockwool blanket, is applied directly on the sections. This also makes for maximum fuel economy, since there is no wasteful air space between the boiler surface and the insulation.

To provide year 'round hot water at the minimum of cost, Series "C" Boiler Units can be equipped with two sizes of built-in hot water coils (G), for the design of this Boiler is such that definite and positive inner circulation of the boiler water between sections is assured. These coils are used in combination with a storage tank. If preferred, an external tankless heater can be installed which also provides year 'round hot water.

The Oil Burners with which Series "C" Boiler Units are equipped are models which have proved themselves notably economical to run, notably dependable, notably free from mechanical failure. Both Boiler and Burners are engineered to utilize the utmost in performance from the capabilities of each.

The appearance of the Series "C" Boiler is most attractive, for it is finished in smooth green enamel, Bonderized as a further protection against time and rust. Remarkably compact, it is furnished in sizes from three to six sections inclusive, either with or without the vestibule (H) enclosing the burner and controls.

Judged on the basis of low first cost, low operating cost, and low maintenance cost, Gilbarco Series "C" Boiler Units are outstanding contributions to the science of economical home heating. BUY A SERIES "C" BOILER UNIT TODAY!

Made by
GILBERT & BARKER MANUFACTURING CO.
Springfield, Massachusetts • Toronto, Canada

SPECIFICATIONS

UNIT NUMBER	Output in B.T.U. per hour		Square Feet Steam Radiation**				Square Feet Hot Water Radiation**				Domestic Water Coil Capacities Gallons of Water in Three Hrs. 100°F. Temperature Rise	
			Gross*	Net†	Net†	Net†	Gross*	Net†	Net†	Net†	**Boiler Water at 180°F. Av. Temp.**	
	Gross*	Net†		Without Domestic Water Coil	With Standard Coil	With Special Coil		Without Domestic Water Coil	With Standard Coil	With Special Coil	With Standard Water Coil	With Special Water Coil
C—32	103,000	71,000	430	295	260	245	685	475	420	390	45	66
C—42	131,000	90,500	545	375	340	325	875	600	545	515	45	66
C—52	159,000	109,500	660	455	420	405	1060	725	670	640	45	66
C—62	187,000	129,000	775	535	500	485	1250	850	795	765	45	66

*Gross output is the total output developed at the boiler nozzle under nationally recognized standard test conditions and specifications.

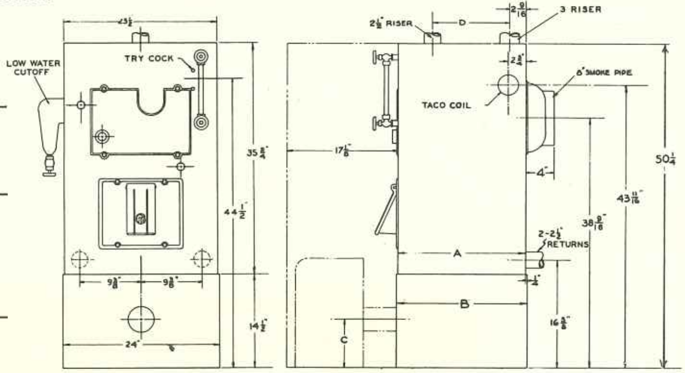
†Net rating represents the allowable standing cast-iron radiation which can be connected to each boiler when the domestic hot water load is as shown at the top of each column. No deduction for the hot water coil, regardless of storage tank size, should be made from the net ratings, since the maximum load imposed by each coil has already been deducted.

**All ratings expressed in square feet are based on a heat emission of 240 B.T.U. per square foot for steam and 150 per square foot for water.

Note: When the average water temperature in the radiators is other than 170°F. (standard) the required amount of installed radiation for heating the building to 70°F. room temperature must be multiplied by a factor (F) from the Correction Table and the boiler unit selected from this net figure.

CORRECTION TABLE

Av. Water Temp. in Radiator °F.	Heat Emission at 70°F. Room Temp. (B.T.U./ Hr./Sq. Ft. of Installed Rad.)	Factor (F)
150	110	.733
160	130	.866
170 Std.	**150**	**1.000**
180	170	1.134
190	190	1.267
200	210	1.400
210	230	1.534



When ordering, specify whether the unit is for a steam or hot water system by adding the letter "S" for steam or "W" for hot water to the unit number. If the extended jacket is wanted add the further suffix "E." (Example: C-52SE if for steam with extended jacket; C-52W if hot water with flush jacket.) Also specify whether with standard or special domestic water coil.

DIMENSIONS (Inches)

Unit No.	A	B	C	D
C-32	14⅞	16⅝	7	9⅜
C-42	19⅞	20 1/16	7½	13⅞
C-52	23 15/16	24⅝	7½	18 7/16
C-62	28 7/16	29⅛	7½	22 15/16

BOILER

Type: Sectional; vertical water tube construction; semi-filter, three-pass type.
Material: Cast-iron boiler on heavy gage steel base
Special Features: Exclusive "G&B" design for oil firing; ample furnace volume. Large interconnecting top nipples between sections for rapid and uniform internal water circulation. Inverted wedge lock for positive cement seal between sections. Convenient access to combustion chamber; small flame observation port. Boiler hydrostatically tested. A.S.M.E. approved.

BOILER TRIM

Steam: Compound steam gage, safety valve, gage glass and try-cocks
Hot Water: Combination altitude gage and thermometer

JACKET

Type: Extended jacket completely enclosing boiler, burner and controls. Can also be supplied with flush jacket for boiler only. Jacket extension enclosing burner and controls can be added to flush jacket at any time. Jacket can be installed after boiler is assembled, connected and tested
Material: Heavy gage steel
Finish: Bonderite Treated (Rust-resisting Process). Finished in smooth gloss green enamel
Insulation:. Close fitting Rockwool blanket directly on boiler sides, top, front and rear. Combustion chamber access and cleanout doors thoroughly insulated
Jacket Extension: Same height and width as jacket; completely encloses burner and controls; has hingeless door, completely removable for service. Vestibule compartment illuminated for easy inspection of water gage without removing door

COMBUSTION CHAMBER

Type: Rectangular design; prefabricated; especially engineered for each model
Material: Insulating brick; packaged with Rockwool insulation

YEAR-ROUND DOMESTIC HOT WATER (optional)

Copper bayonet type indirect coil for use with storage tank can be furnished in standard or special length. Horizontally mounted in rear section. Completely submerged at normal water level. Tested to 350 pounds per square inch
External tankless heater for horizontal mounting at side of boiler also available.

AUTOMATIC CONTROLS

Steam: Stack Switch, Thermostat, Low Water Cut-off, Pressure Limit Control, Domestic Hot Water Control
Hot Water: Stack Switch, Thermostat, Temperature Control and Domestic Hot Water Control

BOILER SIZE	C—32	C—42	C—52	C—62
Burner Model - Specify which is desired (Standard with GB-OO)	GB-OO or GBS	GB-OO or GBS	GB-OO or GBS	GB-OO or GBS
Heating Surface - Sq. Ft.	20.8	27.4	33.8	40.3
Water Capacity				
To Water Line (Steam Models) Pounds	87	103	119	135
Full (Water Models) Pounds	112	136	160	185
Combustion Chamber				
Length - inches	9¼	11⅝	16⅛	19⅜
Width - inches	11 5/16	11½	11½	11½
Height - inches	16½	16½	16½	16½
Recommended Firing Rate for Boiler Rating - g.p.h.	1.00	1.25	1.50	1.75
Nozzle Size U. S. g.p.h.	1.00	1.25	1.50	1.75
Nozzle Spray Angles - Degrees	70	70	60	60
Chimney - Size - Inches	8 x 8	8 x 8	8 x 8	8 x 8
Minimum Height - Feet	26	26	26	26
Approximate Shipping Weight - Total Lbs.	740	880	1050	1200

The manufacturer reserves the right to change ratings and specifications without notice or liability

0-221-5416 Gilbarco
Printed in United States of America

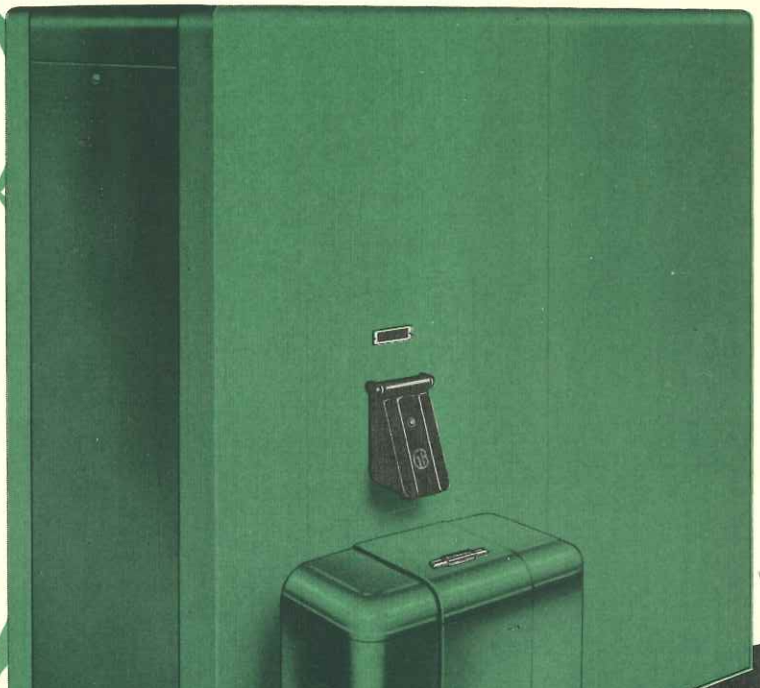
Made by
GILBERT & BARKER MANUFACTURING CO.
Springfield, Massachusetts • Toronto, Canada

Gilbarco

MODELS FBS•80 and FBS•100

WARM AIR CONDITIONERS

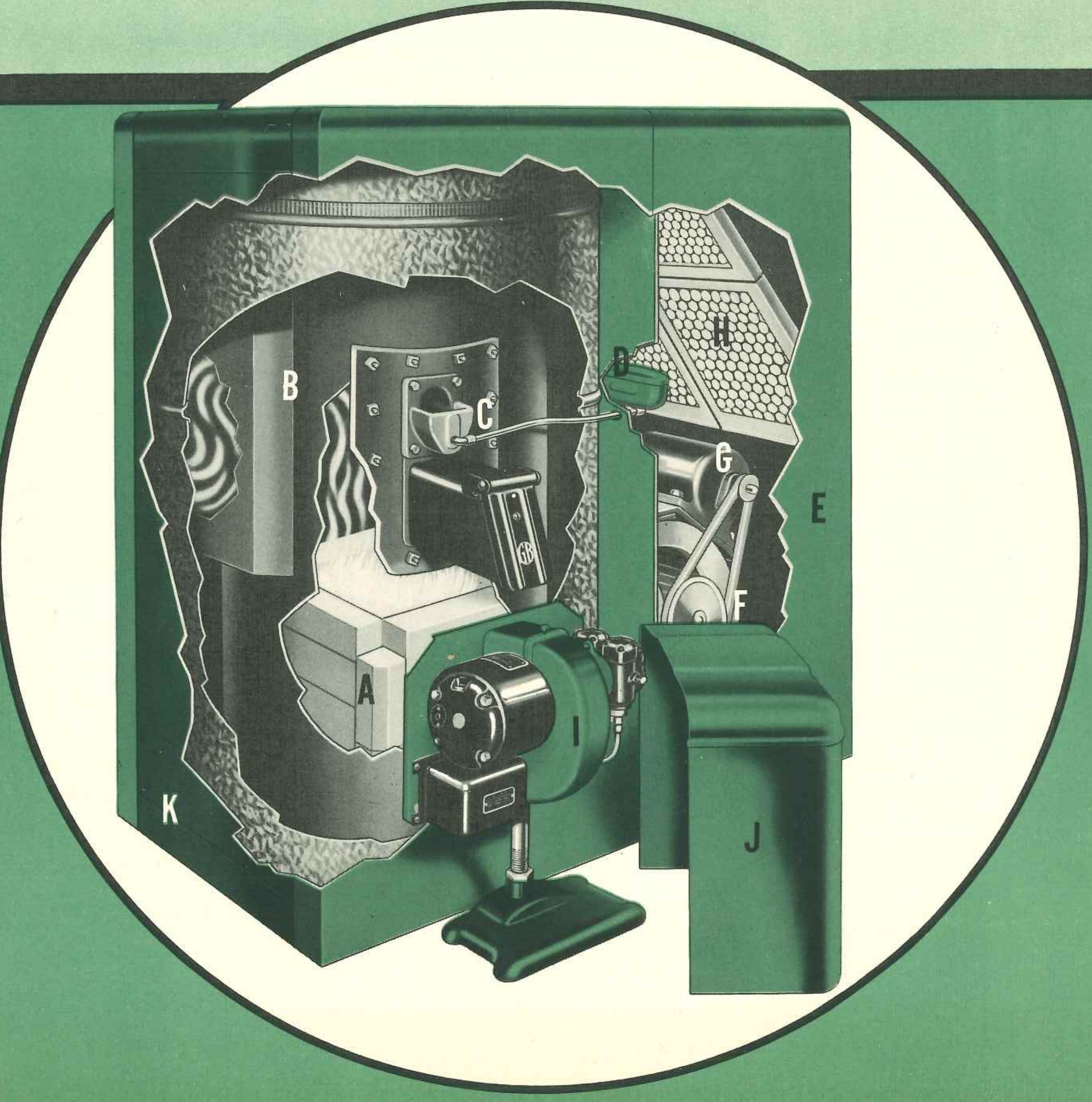
HEATS
HUMIDIFIES
CIRCULATES
CLEANS



COMFORT at a modest price!

FOR healthful comfort in the home during the cold months of the year more than just heat is required. The heat must be ***clean*** — free of the dust, lint and other impurities which irritate the mucous passages of the nose, throat and lungs and contribute in large measure to colds and other more serious respiratory diseases. The heat must be properly ***humidified*** — for dry heat also is harmful to the respiratory passages, and in addition is needlessly costly. And the heat must be ***even*** — without cold corners in any of the rooms or stratified layers of chilly air along the floors.

A few years ago such ideal home heating was impossible to obtain at any price. Today it can be obtained at a very modest price with Gilbarco Model FBS-80 and FBS-100 oil-fired Warm Air Conditioning Units. These new Units, products of a manufacturer with more than fifty years of experience in building Oil Heating equipment, are low in first cost, but high in operating efficiency. And high operating efficiency means low fuel bills. They provide clean, filtered, properly humidified, completely automatic healthful heat — at a cost any home owner can afford.



For HEALTH.... COMFORT.... *enduring* ECONOMY *buy the*

GILBARCO FBS·80 - FBS·100

MANY LONG MONTHS OF PAINSTAKING ENGINEERING RESEARCH AND FIFTY YEARS OF PRACTICAL EXPERIENCE HAVE BEEN COMBINED TOWARD ONE OBJECTIVE IN DESIGNING GILBARCO'S NEW FBS-80 AND FBS-100 WARM AIR CONDITIONING UNITS. THAT ONE OBJECTIVE — *OPERATING ECONOMY* — HAS BEEN ACHIEVED.

THE ADVANCED DESIGN AND CONSTRUCTION OF THESE UNITS IS SHOWN IN THE CUTAWAY VIEW AT THE LEFT. EVERY DETAIL HAS A BEARING ON THEIR EFFICIENCY — AND CONSEQUENTLY ON THEIR OPERATING COST. EVERY DETAIL HAS BEEN WEIGHED AND BALANCED TO OBTAIN THE HIGHEST POSSIBLE EFFICIENCIES CONSISTENT WITH ENDURING LONG LIFE.

A COMBUSTION CHAMBER Formed of insulating fire brick, which provides rapidly an intensely high temperature combustion zone to assist in burning completely every atom of fuel. Since this brick is light in weight the chamber stores up only a very small quantity of heat and thereby minimizes loss of heat up the chimney when the burner shuts down.

B FURNACE AND RADIATOR BODY Built integral at the factory — welded permanently gas, dust and odor tight of heavy, copper-bearing steel plate. From the cylindrical furnace chamber the combustion gases pass into the semi-hexagonal shaped radiator, where the gases split and come forward, then drop and travel back toward the rear of the furnace and finally enter the smoke hood. This design of furnace and radiator body provides an extra large effective area of heating surface, making for efficient extraction of the maximum amount of heat from the flue gases.

C CAST IRON HUMIDIFIER Inserted in the fire box directly above the flame to provide positive, more continuous evaporation.

D FLOAT CONTROL Located in the blower compartment away from the high temperature zone, so that the action of heated water will not affect operation of the valve. This control, when set to meet the requirements of the installation, then automatically provides proper humidification under all conditions of operation.

E BLOWER COMPARTMENT Can be installed on either side of the furnace for easy adaptation to the most effective duct layout.

F BLOWER FAN Double-width, double-inlet, to deliver a large volume of air at low speed, making for extremely quiet operation. Blower is of sufficient capacity to recirculate clean, filtered air throughout the entire house every few minutes — from four to eight times per hour. If desired this rate can be increased to circulate air through the house during the summer months.

G BLOWER MOTOR Long hour duty type, protected by an automatically reset overload mechanism. Both motor and fan are mounted on rubber to eliminate noise and vibration.

H FILTERS Four easily replaceable spun glass filters provide a filter area of 1200 square inches. These filters are so located that cool, unheated air passes through them — providing higher filter efficiency, longer life, and eliminating the hazard of overheated filters. By means of these filters nearly 100% of the dust, dirt, lint and other impurities are removed from the air within your home.

I OIL BURNER Engineered for the unit and so co-ordinated as to utilize its utmost capabilities. Burns the heaviest medium grade of domestic fuel oil.

J BURNER HOUSING Specially designed to absorb any possible mechanical noise. Standard with GB-00 burner.

K FURNACE JACKET Handsome jacket is automobile body steel, Bonderized against rust and time and finished in smooth, glossy green enamel. Because of the double jacketed case design, the outer jacket never gets hot to the touch.

BUY AN FBS-80 OR FBS-100 AIR CONDITIONING UNIT TODAY FOR YOUR COMFORT, CONVENIENCE AND FOR OPERATING ECONOMY!

19

Made by

GILBERT & BARKER MANUFACTURING CO.

Springfield, Massachusetts • Toronto, Canada

SPECIFICATIONS

HEATING UNIT

Type: Direct fired, gas-tight welded construction
Material: Heavy gage copper bearing steel
Heating Surface: Prime — furnace body, curved surfaces. Indirect — large radiator
Flue Gas Travel: Radiator horizontal baffle produces two-pass down draft travel
Radiator Connection: Radiator and body built integral
Inspection and Relief Opening: Located at front for visibility of flame
Blower and Filters: Located to handle unheated, cool return air for maximum safety and blower efficiency

JACKET

Type: Double casing with insulating air space between
Material: Steel; 20 U. S. gage
Finish: Smooth gloss enamel; two-tone green; Bonderized
Doors: Hingeless type access doors on blower cabinet

BLOWER

Type: Blower unit permits location on either side of heating unit
Fan: Double width, double inlet; forward curved, multi-blade; balanced
Fan Shaft Bearings: Self-aligning wick-packed bronze bearings
Rubber Mountings: Blower and motor isolated from frame with rubber mountings
Motor: Long hour type, especially designed for belt driven fans; built-in thermally operated, automatically reset overload protector; 1750 R.P.M.; rubber mounted
Drive: Silent, rubberized "V" belt; cast-iron fan pulley; adjustable motor pulley allows approximately 25% increase or decrease from normal R.P.M.

FILTERS

Type: Viscous coated spun glass; fire resistant; replaceable.
Secured in tight fitting frames. Approved by Underwriters' Laboratories, Inc.

HUMIDIFIER

Type: Special design inserted steam boiler
Material: Cast iron
Location: Heating surface inside furnace body, outlet in air stream

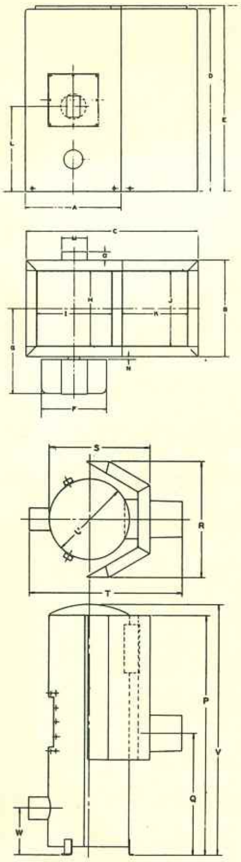
CONTROLS

Operating: Low voltage thermostat
Combustion Safety: Stack switch
Combination High Limit and Fan Control: Operated by air temperature
Humidifier: External, adjustable float control for regulating humidifier water level

ACCESSORIES

Cooling Coils: Can be installed for summer cooling
Humidistat: Low voltage type to control solenoid valve in feed water line can be furnished
Windowstat: Low voltage type can be supplied to prevent window condensation

	FBS-80	FBS-100
B.T.U. per Hr. Rating at Register	80,000	100,000
" " " " Plenum	100,000	125,000
Burner GB-00 or GBS (Std. with GB-00)		
Oil Burned at Rated Output - G.P.H.	96	1.20
Nozzle Size and Angle	1.00-80	1.25–80
Evaporation Rate - Lbs. Water per Hr.	4.75	5.25
Heating Surface - Sq. Ft.	43.6	43.6
Gage of Metal in Body Shell	12	12
" " " " Body Head	10	10
" " " " Radiator Shell	14	14
" " " " Radiator Head	14	14
Fan Diameter - Inches	10⅝	12¼
Blower Capacity C.F.M. - High	1200	1800
Blower Capacity C.F.M. - Low	700	900
Air Pressure Drop Through Unit — Ins. Water	.05	.08
Max. duct resistance — Ins. Water	.16	.187
Blower Speed Range R.P.M. (Standard)**	430-625	430–625
Blower Pulley Diam. - Inches	9 x ¾	9 x 1
Motor Pulley Diam. - Inches	3¼ x ½	3¼ x ⅝
Belt Size	FA-44	FA-47
Motor - H.P.	⅙	¼
Motor - Type	Split Phase	Split Phase
Power Consumption - Fan Motor (Watts)	165	175
Filters - No. and Size	4 — 15x20x1	4—15x20x1
Filters - Area Sq. Ft.	8.3	8.3
Combustion Chamber Size. - Ins.	10½x10½†	10½ x 10½†
Combustion Chamber - Height - Ins.	16¼	16¼
Chimney Size - Inches	8 x 8	8 x 8
Chimney Height - Feet	26	26
Shipping Weight (Approx.)		
Unit	825	850
Burner and Controls	130	130



	FBS-80	FBS-100
A	30½"	30½"
B	30½"	30½"
C	54¾"	54¾"
D	58"	58"
E	59"	59"
F	20⅝"	20⅝"
G	26⅝"	26⅝"
H	24"	24"
I	24"	24"
J	24"	24"
K	21"	21"
L	27"	27"
M	8"	8"
N	2⅜"	2⅜"
O	2¾"	2¾"
P	53"	53"
Q	27"	27"
R	25"	25"
S	22⅞"	22⅞"
T	34"	34"
U	18"	18"
V	55½"	55½"
W	10¼"	10¼"

** Higher or lower speeds can be obtained using high or low speed pulley and belt drives.
† Pre-cut insulating refractory combustion chamber included with unit.

The manufacturer reserves the right to change specifications and ratings without notice or liability.

O-224 8415

Printed in United States of America

Made by

GILBERT & BARKER MANUFACTURING CO.

Springfield, Massachusetts • Toronto, Canada

Engineered to develop the ultimate in heating value from each particle of oil, these Air Conditioning Units provide healthful comfort with remarkable economy. Three models, ranging in size from a unit to serve the small home to models capable of providing the maximum of comfort in medium-sized homes . . . each handsome, compact, completely self-contained in a superbly finished baked enamel cabinet, chromium trimmed.

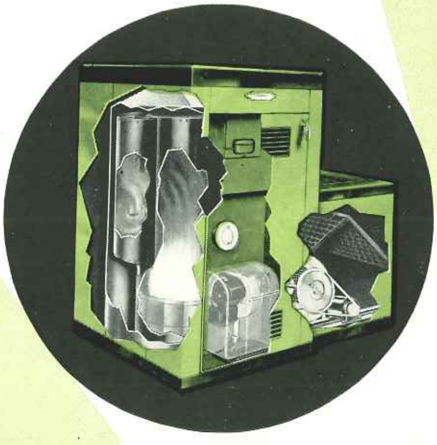
GILBARCO

MODELS FBD-120—FBD-200—FBD-250

WARM AIR CONDITIONERS

At a cost no greater than you must pay for only heating your home by other means, these Air Conditioning Units establish new standards of comfort, health, convenience and economy by: warming the air during the heating season . . . gently forcing the warmed air to all parts of all rooms . . . humidifying the air to the proper moisture content during the heating season . . . cleaning the air with filters which remove dust, bacteria and pollen during both summer and winter . . . gently but continuously moving the air throughout the home to maintain a more comfortable atmosphere in summer.

- HEATS . . .
- HUMIDIFIES . . .
- CIRCULATES . . .
- CLEANS . . .



21

MOST HEAT PER DOLLAR

RATINGS AND SPECIFICATIONS 110 VOLT, 60 CYCLE A. C. UNITS

HEATING UNIT

Type: Direct fired, gas-tight construction

Material: Heavy gage copper bearing steel

Heating Surface: Prime—furnace body; Indirect— crescent shaped radiator. Curved surfaces

Flue Gas Travel: Radiator horizontal baffle produces two-pass down draft travel

Radiator Connection: Special wedge-shaped cast-iron connecting collar

Inspection & Relief Opening: Located at front for visibility of flame

Blower and Filters: Located to handle unheated, cool return air for maximum safety and blower efficiency

CASING

Type: Double casing with insulating air space between

Material: Steel; Cabinet 20 U. S. gage

Finish: Smooth gloss enamel; two-tone green

Doors: Hingeless type access doors on blower cabinet and burner compartment

BLOWER

Type: Self-contained blower unit permits location on either side of heating unit

Fan: Double width, double inlet; forward curved, multi-blade; balanced

Fan Shaft Bearings: Self-aligning graphited bronze bearings

Rubber Mountings: Blower and motor isolated from frame with rubber mountings

Motor: Long hour type, especially designed for belt driven fans; built-in thermally operated overload protector; 1750 R.P.M.

Drive: Silent, rubberized "V" belt; cast-iron fan pulley; adjustable motor pulley allows 16% increase or decrease from normal R.P.M.

FILTERS

Type: Viscous coated glass wool; fire resistant; replaceable. Approved by Underwriters' Laboratories, Inc. Secured in tight fitting frames.

HUMIDIFIER

Type: Special design inserted steam boiler

Material: Cast iron

Location: Heating surface inside furnace body, outlet in air stream

CONTROLS

Operating: Low voltage thermostat

Combustion Safety: Stack switch

Combination High Limit and Fan Control: Operated by air temperature

Humidifier: External, adjustable float control for regulating humidifier water level

ACCESSORIES

Hot Water Coil: Openings provided for installation of hot water heating coil which can be furnished as an extra

Cooling Coils: Can be installed for summer cooling

Humidistat: Low voltage type to control solenoid valve in feed water line can be furnished

Windowstat: Low voltage type can be supplied to prevent window condensation

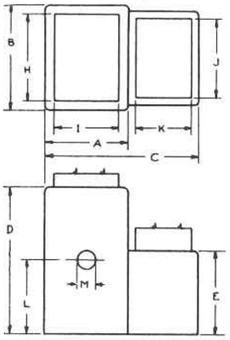
TECHNICAL DATA

MODEL NO.	FBD-120	FBD-200	FBD-250
B.T.U. per Hr. Rating at Register	120,000	200,000	250,000
" " " Plenum	150,000	250,000	312,500
Burner	GBOO	GB1	GB1
Oil Burned at Rated Output - G.P.H.	1.40	2.38	2.87
Nozzle Size and Angle	1.50-70	2.50-70	3.00-70
Evaporation Rate - Lbs. Water per Hr.	7.5	14.0	16.0
Heating Surface - Sq. Ft.	46.4	82.4	82.4
Gage of Metal in Body Shell	10	10	6
" " " " Body Head	8	6	4
" " " " Radiator Shell	14	14	14
" " " " Radiator Head	12	12	12
Fan Diameter - Inches	12½	16	18
Blower Capacity C.F.M. - High	1750	3000	3500
Blower Capacity C.F.M. - Low	800	2500	2800
Air Pressure Drop Through Unit Ins. Water	.04	.08	.08
External Resistance at which fan is rated	.125	.300	.325
Blower Speed Range R.P.M. (Standard)**	338-467	372-515	292-405
Blower Pulley Diam. - Inches	11 x 1	10 x 1	16 x 1 3/16
Motor Pulley Diam. - Inches	3¼ x ½	3¼ x ¾	3¼ x ¾
Belt Size	FA-56	FA-58	FA-68
Motor - H.P.	¼	½	½
Motor - Type	Split Phase	Capacitor Start	Capacitor Start
Power Consumption - Fan Motor (Watts)	170	268	330
Filters - No. and Size	4-20 x 20	6-16 x 25	6-20 x 20) 3-16 x 20)
Filters - Area Sq. Ft.	11.1	16.7	23.4
Combustion Chamber Diam.- Ins.	12½†	19	21½
Combustion Chamber - Height - Ins.	16	16	18
Chimney Size - Inches	8 x 8	8 x 12	8 x 12
Chimney Height - Feet	26	30	35
Shipping Weight (Approx.) Unit	1020	1475	1765
Burner and Controls	130	145	145

**Higher or lower speeds can be obtained using high or low speed pulley and belt drives.

†Pre-cut insulating refractory combustion chamber included with unit.

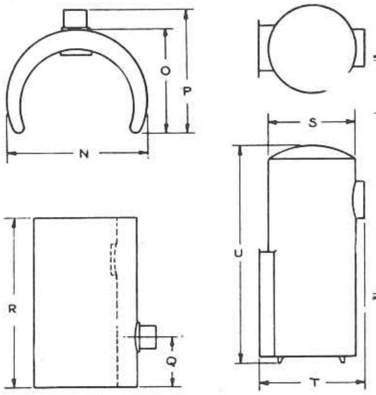
UNIT DIMENSIONS



	FBD 120	FBD 200	FBD 250
A	36	54	54
B	45	63	63
C	66	88	90
D	63	63	63
E	36	42	56
H †	36½	55	55
I †	27½	46	46
J ††	34	42	52
K ††	24	28	28
L	31½	31½	31½
M	8	9	9

†Warm air plenum opening.
††Cold air hood opening.

BODY AND RADIATOR DIMENSIONS



	FBD 120	FBD 200 FBD 250
N	30½	47½
O	22¼	35½
P	27¾	43½
Q	6½	6½
R	29	29
S	17	27
T	19½	32¾
U	59½	60

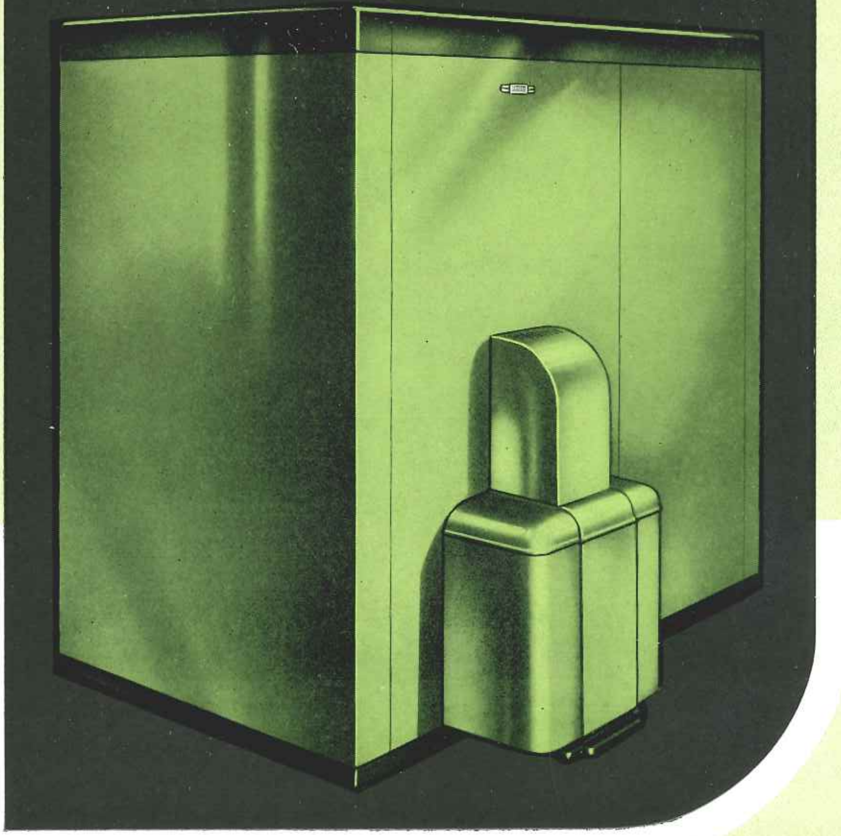
All dimensions in inches.

The manufacturer reserves the right to change specifications and ratings without notice or liability.

Manufactured by
GILBERT & BARKER MFG. COMPANY • Springfield, Mass., Toronto, Canada

Form O-178A 1415

Printed in United States of America



- HEATS
- HUMIDIFIES
- CIRCULATES
- CLEANS

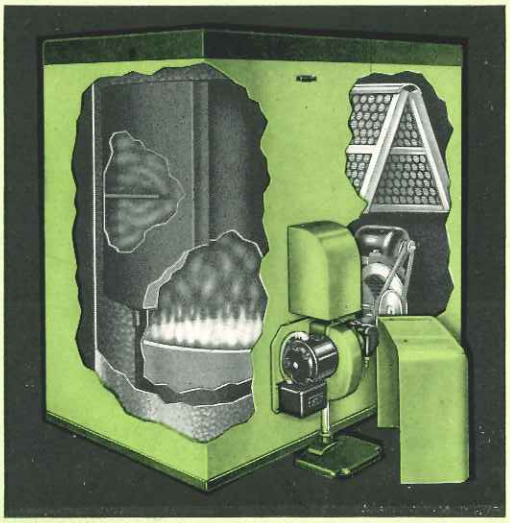
MODELS FBSA-130—FBSA-160

GILBARCO

WARM AIR CONDITIONERS

Warm Air Conditioning provides more than heat—for modern standards of comfort, cleanliness and convenience demand an atmosphere in the home which is more conducive to healthful living than heat alone can supply. Consequently these Air Conditioning units in addition to furnishing automatic, even heat also provide clean, filtered air, humidified to its proper moisture content and gently force-circulated to every part of every room.

These oil-fired models, made in two sizes to meet the varying requirements of medium-sized homes, offer the ultimate comfort of Air Conditioning with an economy of operation, durability, and dependability of performance which make them the outstanding choice for those who want and expect the utmost in healthful comfort in the home.



23

MOST HEAT PER DOLLAR

RATINGS AND SPECIFICATIONS 110 VOLT, 60 CYCLE A. C. UNITS

HEATING UNIT

TYPE: Direct fired, gas-tight construction
MATERIAL: Heavy gage copper bearing steel
HEATING SURFACE: Prime—furnace body; Indirect— crescent shaped radiator. Curved surfaces
FLUE GAS TRAVEL: Radiator horizontal baffle produces two-pass down draft travel
RADIATOR CONNECTION: Special cast-iron connecting collar
INSPECTION and RELIEF OPENING: Located at front for visibility of flame
BLOWER AND FILTERS: Located to handle unheated, cool return air for maximum safety and blower efficiency

CASING

TYPE: Double casing with insulating air space between
MATERIAL: Steel; Cabinet 20 U. S. gage
FINISH: Smooth gloss enamel; two-tone green
DOORS: Hingeless type access doors on blower cabinet

BLOWER

TYPE: Blower unit permits location on either side of heating unit
FAN: Double width, double inlet; forward curved, multi-blade; balanced
FAN SHAFT BEARINGS: Self-aligning graphited bronze bearings
RUBBER MOUNTINGS: Blower and motor isolated from frame with rubber mountings
MOTOR: Long hour type, especially designed for belt driven fans; built-in thermally operated, manually reset overload protector; 1750 R.P.M.
DRIVE: Silent, rubberized "V" belt; cast-iron fan pulley; adjustable motor pulley allows 16% increase or decrease from normal R.P.M.

FILTERS

TYPE: Viscous coated glass wool; fire resistant; replaceable. Approved by Underwriters' Laboratories, Inc. Secured in tight fitting frames

HUMIDIFIER

TYPE: Special design inserted steam boiler
MATERIAL: Cast iron
LOCATION: Heating surface inside furnace body, outlet in air stream

CONTROLS

OPERATING: Low voltage thermostat
COMBUSTION SAFETY: Stack switch
COMBINATION HIGH LIMIT AND FAN CONTROL: Operated by air temperature
HUMIDIFIER: External, adjustable float control for regulating humidifier water level

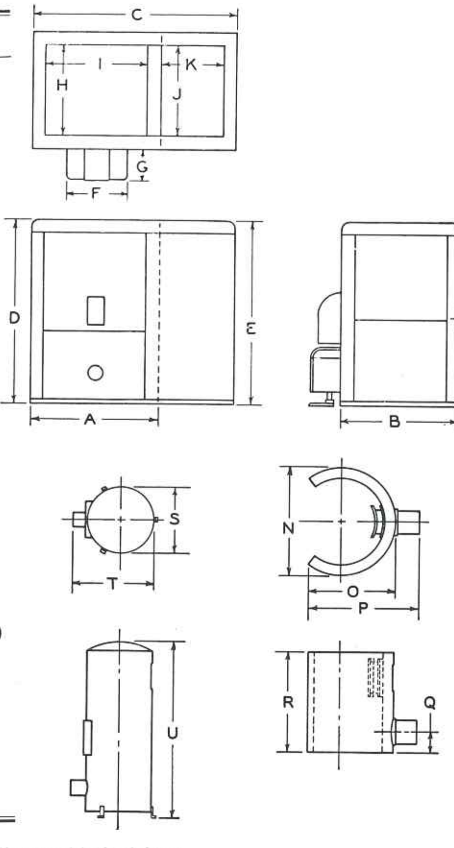
ACCESSORIES

HOT WATER COIL: Openings provided for installation of hot water heating coil which can be furnished as an extra
COOLING COILS: Can be installed for summer cooling
HUMIDISTAT: Low voltage type to control solenoid valve in feed water line can be furnished
WINDOWSTAT: Low voltage type can be supplied to prevent window condensation

TECHNICAL DATA

MODEL NO.	FBSA-130	FBSA-160
B.T.U. per Hr. Rating at Register	130,000	160,000
“ “ “ Plenum	162,500	200,000
Burner	GBOO	GBOO
Oil Burned at Rated Output - G.P.H.	1.45	1.95
Nozzle Size and Angle	1.50 - 70	2.00 - 70
Evaporation Rate - Lbs. Water per Hr.	9.0	12.0
Heating Surface - Sq. Ft.	72.0	72.0
Gage of Metal in Body Shell	10	10
“ “ “ “ Body Head	8	8
“ “ “ “ Radiator Shell	12	12
“ “ “ “ Radiator Head	12	12
Fan Diameter - Inches	12	16
Blower Capacity C.F.M. - High	2000	2400
Blower Capacity C.F.M. - Low	1300	2000
Air Pressure Drop Through Unit—Inches Water	.07	.08
External Resistance at which fan is rated	.20	.28
Blower Speed Range R. P. M. (Standard)**	290 - 490	260 - 418
Blower Pulley Diam. - Inches	11 x 1	12 x 1³⁄₁₆
Motor Pulley Diam. - Inches	1.9-2.9x⅝	1.9-2.9x½
Belt Size	FA 50	FA 56
Motor - H. P.	¼	⅓
Motor - Type	Capacitor Start	Capacitor Start
Power Consumption - Fan Motor (Watts)	150 - 300	183 - 420
Filters - No. and Size	8 - 16 x 20	8 - 16 x 20
Filters - Area Sq. Ft.	17.8	17.8
Combustion Chamber - Diam. - Inches	15†	15†
Combustion Chamber - Height - Inches	16	16
Chimney Size - Inches	8 x 8	8 x 12
Chimney Height - Feet	26	30
Shipping Weight (Approx.)		
Unit	1120	1135
Burner and Controls	130	130

DIMENSIONS



FBSA-130 FBSA-160	
A	43¼″
B	40″
C	69″
D	63″
E	63″
F	20⅝″
G	10⁷⁄₁₆″
H	31½″
I	34½″
J	31½″
K	21½″
L	30″
M	8″
N	36¾″
O	29½″
P	37½″
Q	6¹⁵⁄₁₆″
R	34″
S	22″
T	27⅝″
U	60″

**Higher or lower speeds can be obtained using high or low speed pulley and belt drives.

†Pre-cut insulating refractory combustion chamber included with unit.

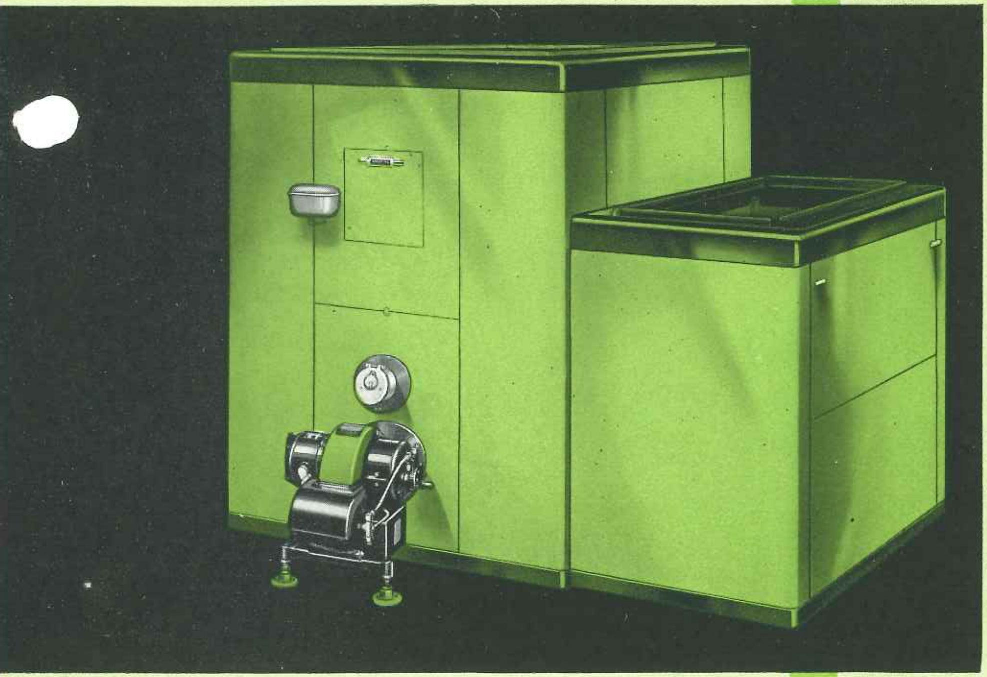
The manufacturer reserves the right to change ratings and specifications without notice or liability.

Manufactured by

GILBERT & BARKER MFG. COMPANY • Springfield, Mass., Toronto, Ontario

Form O-173A 5415

Printed in United States of America



GILBARCO
WARM AIR CONDITIONERS

MODELS FBS-350 and FBS-450

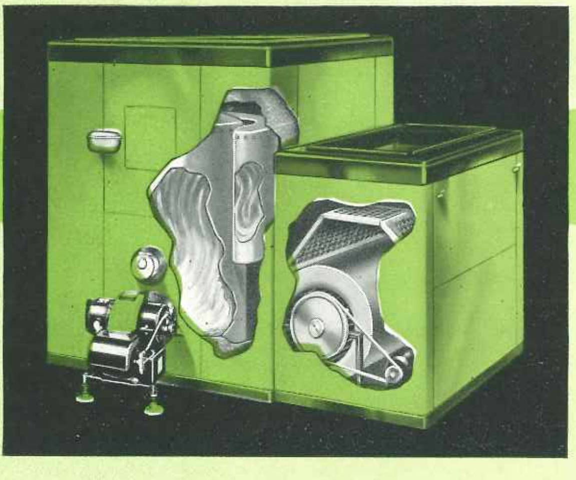
FOR LARGE HOMES
COMMERCIAL AND PUBLIC BUILDINGS

- HEATS
- HUMIDIFIES
- CIRCULATES
- CLEANS

With these models the healthful comfort of Warm Air Conditioning, combined with the convenience of automatic oil heat become available to stores, schools, churches, theaters and public buildings.

Designed to extract the maximum of heating value from each drop of oil, these units operate with amazing economy . . . and in cases where the labor cost of hand firing has been a factor, often pay for themselves in wage savings alone within a very short time.

Completely automatic, durable, dependable, they make possible new comfort . . . and new economy . . . in the heating of large buildings.



MOST HEAT PER DOLLAR

RATINGS AND SPECIFICATIONS 110 VOLT, 60 CYCLE A. C. UNITS

HEATING UNIT

Type: Direct fired, gas-tight construction

Material: Heavy gage copper bearing steel

Heating Surface: Prime—furnace body; Indirect—crescent shaped radiator. Curved surfaces

Flue Gas Travel: Radiator horizontal baffle produces two-pass down draft travel

Radiator Connection: Special wedge-shaped cast-iron connecting collar

Inspection & Relief Opening: Located at front for visibility of flame

Blower & Filters: Located to handle unheated, cool return air for maximum safety and blower efficiency

CASING

Type: Double casing with insulating air space between

Material: Steel; Cabinet 20 U. S. gage

Finish: Smooth gloss enamel; two-tone green

Doors: Hingeless type access doors on blower cabinet

BLOWER

Type: Self-contained blower unit permits location on either side of heating unit

Fan: Double width, double inlet; forward curved, multiblade; balanced

Fan Shaft Bearings: Self-aligning graphited bronze bearings

Rubber Mountings: Blower and motor isolated from frame with rubber mountings

Motor: Long hour type, especially designed for belt driven fans; built-in thermally operated, manually reset overload protector; 1750 R.P.M.

Drive: Silent, rubberized "V" belt; cast-iron fan pulley; adjustable motor pulley allows 16% increase or decrease from normal R.P.M.

FILTERS

Type: Viscous coated glass wool; fire resistant; replaceable. Approved by Underwriters' Laboratories, Inc. Secured in tight fitting frames.

HUMIDIFIER

Type: Special design inserted steam boiler

Material: Cast iron

Location: Heating surface inside furnace body, outlet in air stream

CONTROLS

Operating: Low voltage thermostat

Combustion Safety: Stack switch

Combination High Limit and Fan Control: Operated by air temperature

Humidifier: External, adjustable float control for regulating humidifier water level

ACCESSORIES

Hot Water Coil: Openings provided for installation of hot water heating coil which can be furnished as an extra

Cooling Coils: Can be installed for summer cooling

Humidistat: Low voltage type to control solenoid valve in feed water line can be furnished

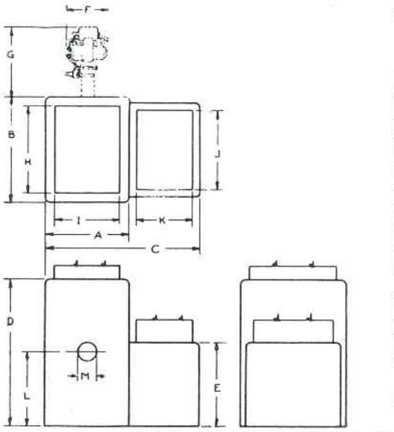
Windowstat: Low voltage type can be supplied to prevent window condensation

TECHNICAL DATA

MODEL No.	FBS 350	FBS 450
B.T.U. per Hr. Rating at Register	350,000	450,000
" " " Plenum	420,000	540,000
Burner	GB2	GB2
Oil Burned at Rated Output - G.P.H.	4.00	5.15
Nozzle Size and Angle	4.00-45	5.00-45
Evaporation Rate - Lbs. Water per Hr.	18.0	20.0
Heating Surface - Sq. Ft.	105.0	105.0
Gage of Metal in Body Shell	6	6
" " " " Body Head	4	4
" " " " Radiator Shell	12	12
" " " " Radiator Head	11	11
Fan Diameter - Inches	18	21
Blower Capacity C. F. M. - High	4800	6000
Blower Capacity C. F. M. - Low	3800	5000
Air Pressure Drop Through Unit—Ins. Water	.09	.09
External Resistance at which fan is rated	.375	.425
Blower Speed Range R.P.M. (Standard)**	314-430	291-385
Blower Pulley Diam.- Inches	15 x 1$\frac{5}{16}$	19 x 1$\frac{7}{16}$
Motor Pulley Diam. - Inches	4 x ¾	4½ x ¾
Belt Size	FA-68	FB-78
Motor - H. P.	¾	1
Motor - Type	Capacitor Start	Repulsion Induction
Power Consumption - Fan Motor (Watts)	640	680
Filters - No. and Size	6-20x20) 3-16x20)	12-16x20
Filters - Area Sq. Ft.	23.4	26.7
Combustion Chamber - Diam. - Ins.	25	29
Combustion Chamber - Height - Ins.	18	18
Chimney Size - Inches	12 x 12	12 x 16
Chimney Height - Feet	35	45
Shipping Weight (Approx.) Unit	2400	2600
Burner and Controls	180	180

**Higher or lower speeds can be obtained using high or low speed pulley and belt drives.

UNIT DIMENSIONS

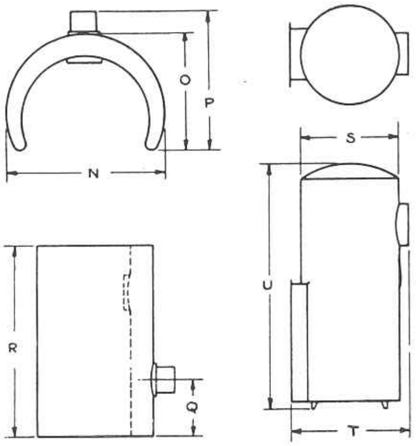


	FBS 350	FBS 450
A	61	61
B	65	65
C	97	97
D	72	72
E	56	59
F	17	17
G	30	30
H†	59½	59½
I †	53	53
J ††	57	57
K ††	28	28
L	31¼	31¼
M	10	10

†Warm air plenum opening

††Cold air hood opening

BODY AND RADIATOR DIMENSIONS



	FBS 350 FBS 450
N	54
O	31¾
P	41¾
Q	8
R	40
S	35
T	45½
U	69¼

All dimensions in inches

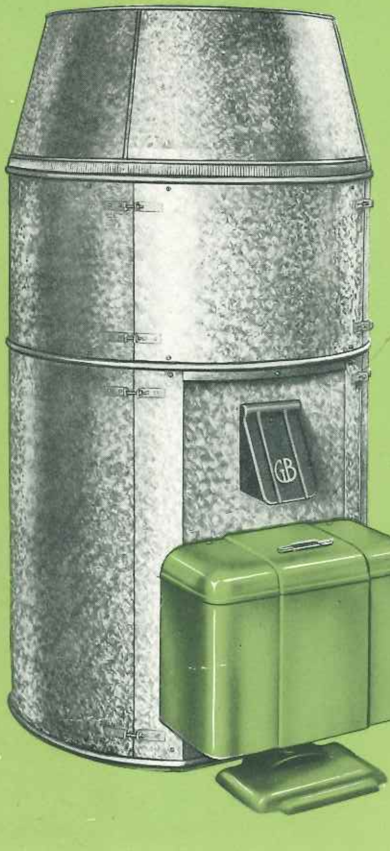
The manufacturer reserves the right to change specifications and ratings without notice or liability.

Manufactured by

GILBERT & BARKER MFG. COMPANY • Springfield, Mass., Toronto, Ontario

Form O-179 8405

Printed in United States of America



GILBARCO

OIL-FIRED GRAVITY FURNACE UNITS

All-Steel
Quick Heating
Efficient
Economical

For maximum efficiency, maximum economy, maximum satisfaction with warm air heating using Oil — the modern fuel — a unit designed particularly for the modern fuel is required.

The furnaces of these sturdily-built units are engineered particularly for oil firing. They are of all-steel construction — permanently welded — permanently gas-tight — permanently dust-tight. The large-volume combustion chamber is lined with pre-cut refractory. The boiler-plate, partitioned radiator is extra large to provide the generous heating surface which means more heat from less fuel. Long flue travel and down draft design also contribute to notably economical operation.

Modern standards of comfort demand the cleanliness and convenience of automatic oil heating. These dependable units provide the assurance of years of comfort at the lowest possible cost — which means both the initial cost of the equipment and the cost of its operation.

MOST HEAT PER DOLLAR

RATINGS AND SPECIFICATIONS 110 VOLT, 60 CYCLE A. C. UNITS

HEATING UNIT

Type: Direct fired, gas-tight construction.

Material: Heavy gage copper bearing steel.

Heating Surface: Prime — furnace body; Indirect — auxiliary radiator.

Flue Gas Travel: Radiator horizontal baffle produces two-pass down draft travel.

Construction: Furnace body and radiator welded, permanently free from gas leaks.

Inspection and Relief Opening: Located at front for maximum flame visibility.

CASING

Type: Round external casing and inner baffle with air space between.

Material: Unpainted galvanized steel; furnace jacket heavy gage.

CONTROLS

Operating: Low voltage thermostat.

Combustion Safety: Stack switch.

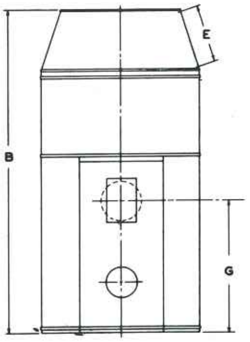
High Limit Control: Operated by air temperature.

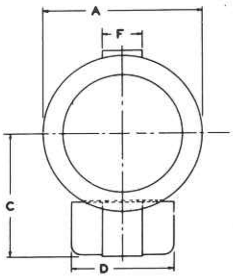
ACCESSORIES

Humidifier: Special cast iron steam boiler type can be furnished as an extra for insertion at rear of radiator.

Humidistat: Low voltage type to control solenoid valve in feed water line can be furnished as an extra.

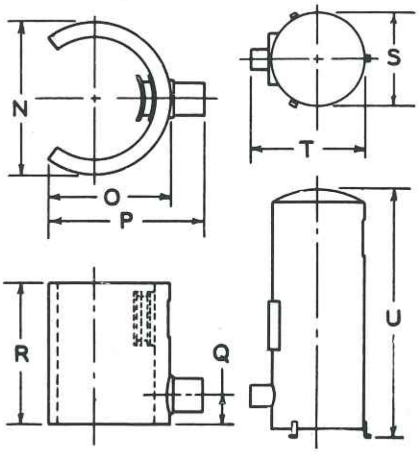
Windowstat: Low voltage type to prevent window condensation can be furnished as an extra.





UNIT DIMENSIONS

	FGR-500	FGR-800
A	32″	45″
B	66⅜″	71⅜″
C	25 5/16″	26½″
D	20⅝″	20⅝″
E	12″	12″
F	8″	8″
G	27″	30″



BODY AND RADIATOR DIMENSIONS

	FGR-500	FGR-800
N	25″*	36¾″
O	10″*	29½″
P	15″*	37½″
Q	6″*	6 15/16″

	FGR-500	FGR-800
R	32″*	34″
S	18″	22″
T	23″	27⅝″
U	55½″	60″

*FGR-500 Radiator built integral with body

TECHNICAL DATA

	FGR-500	FGR-800
Square Inches Leader Pipe Area	500	800
B.T.U. per hr. Rating at Register	68,000	109,000
B.T.U. per hr. Rating at Bonnet	85,000	136,000
BURNER	GBOO	GBOO
Oil burned at Rated Output G.P.H.	0.93	1.43
Nozzle Size and Angle	1.0 - 70	1.50 - 70
Heating Surface — Sq. Ft.	38.1	72
Gage of Metal in Body Shell	12	10
Gage of Metal in Body Head	10	8

	FGR-500	FGR-800
Gage of Metal in Radiator Shell	14	12
Gage of Metal in Radiator Head	14	12
***Combustion Chamber Diam. — Inches**	11½	15
***Combustion Chamber Height — Inches**	13½	16
Chimney Size — Inches	8 x 8	8 x 8
Chimney Height — Feet	26	26
Shipping Weight (Approx.) Lbs. Unit	450	750
Burner & Controls	130	130

***Pre-cut insulating refractory combustion chamber included with unit.**

The manufacturer reserves the right to change ratings and specifications without notice or liability.

MANUFACTURED BY

GILBERT & BARKER MFG. COMPANY • Springfield, Mass., Toronto, Ontario

Form O-211 8405

Printed in United States of America

PLANNING FOR AIR CONDITIONING INSTALLATIONS

The advantages of direct fired, warm air, air conditioning equipment are fast gaining the acceptance of home owners and home builders.

Architects are in a position to furnish worthwhile service in planning houses so that the duct layouts can be installed at the least expense and for the most satisfactory operation. For your convenience and reference we propose the following suggestions:

1. In general, provision should be made for placing cold air returns in outside walls and for placing supply risers in inside walls. If it is necessary to place supply risers in outside walls, they should be insulated.

2. For best appearance baseboard heights should be not less than 6″ so that the registers and grilles will not extend above the top of the baseboard.

3. The actual free openings allowed for risers and returns in partitions and outside walls should be not less than 3″, and preferably 3½″. To meet these requirements, commercial 4″ studding is satisfactory. If the available space is less than 3″, floor registers or ceiling registers must be used. The installation of ceiling registers requires overhead duct work, which increases the initial cost and results in a sacrifice in appearance.

If it is necessary to place supply risers in outside walls, enough space must be provided to allow for the riser insulation. If risers are to be placed in masonry walls, it is often necessary to provide recesses or chases in order to make available the necessary space as specified above. Risers can often be placed in closets.

4. Duct layouts to the second and third floors are simplified and less expensive to install if the partitions are so located that the risers to the upper rooms can be placed in partitions which are in line. If the partitions do not line up, horizontal duct offsets can be installed at a slight additional cost if the joists run in the same direction as the offset. If, however, the joists run at right angles to the line of ducts, it is necessary to cut and reinforce the joists for the ducts.

5. The framing of the studding and joists at the sill and of the joists at the main supporting beam should be made in such a manner that the riser connections can be made with a minimum of cutting.

6. Greater basement head room and a neater and better appearing basement duct system can be made if full advantage can be taken of running a maximum number of ducts between the joists. This can be accomplished to a greater degree if the joists rest on top of the beams rather than being framed into them.

REGISTERS AND GRILLES

The correct location and selection of proper size and type of registers and grilles is an important consideration in an air conditioning layout. In general warm air registers should be placed on inside walls so that the flow of warm air is parallel to an adjacent exposed wall. There are five possible locations for warm air inlets; namely, in the floor, in the baseboard, in the side wall slightly above the baseboard, in the side wall approximately 7′ above the floor and in the ceiling. The choice of location and type is influenced by several factors.

1. The owner may have a preference for the location of the registers.
2. Occasionally, the only available wall in a room is obstructed by a built-in cabinet, bookcase or movable furniture occupying the lower part of the wall, in which case a high side wall location is necessary. Built-in bookcases, closets and window seats with side doors often prevent the location of the register in what would otherwise be the most desirable location, unless provision is made to extend the ducts to a register either above or below the built-in doors.
3. In long, narrow rooms, where the register must be located at one end, it is necessary to use the high side wall location so that the high velocity air stream will carry to the opposite end of room.
4. Where the outside walls or partitions are constructed of brick, stone or concrete blocks, it may be necessary to install all registers in the floor or ceiling.
5. If artificial cooling is to be a part of the system, the supply grilles should be located 6′ 6″ above the floor so that the cold air will diffuse and reach the normal room temperature before it reaches the zone of occupancy.
6. The cost of installing the registers may be the deciding factor in selecting their location, because the amount of cutting and reinforcing of beams, studs and other structural framing influences the installed cost. Also, locations which require more duct work or special fittings may make it desirable to select a less expensive location.

LOCATION OF WARM AIR REGISTERS

The following general rules for locating warm air registers should be followed, if possible, taking into consideration the various conditions as itemized above:

1. Warm air registers should be located on the inside walls.
2. The warm air should flow parallel to an adjacent exposed wall, so that the cold air descending from the cold walls or windows will be diluted by the warm air. The warm air stream should be directed over but not in direct contact with the walls.
3. If an inside wall location is not available, the warm air registers can be installed on an outside exposed wall, but the riser and register box must be insulated with "Rockwool" or ½″ "Asbestocell" or the equivalent.
4. Warm air registers may be located in the floor but this location should not be chosen if a wall location is available.
5. The warm air registers should be located so that the flow of warm air does not come in contact with any occupants and will not be obstructed by furniture. The high sidewall location meets both of these requirements.

6. Warm air registers should not be located behind doors, which will obstruct the flow of air when the doors are opened.
7. In all rooms in which there is a floor heat loss, such as floors over exposed areas or concrete floors on the ground, the best results will be obtained by locating the warm air registers near the floor level. This will reduce the temperature difference between the floor and the ceiling.
8. Do not locate registers where soil pipes or other plumbing will be installed.
9. Do not locate registers in second floor partitions where there is a door or archway directly below in the first floor partition, because vertical offsets in the risers cannot be installed without considerable cutting and reinforcing of the studs and headers.
10. When locating the registers and risers, the general arrangement of the basement duct system should be borne in mind, thus eliminating complicated and unnecessary sheet metal work.
11. Do not locate the register so that the warm air stream will blow into an open fireplace or out of the room through an open door or into a cold air return.

LOCATION OF COLD AIR RETURNS

In mechanical forced air heating systems, the best results are obtained by recirculating air from all major rooms except the kitchen, bath, garage or any other rooms in which odors originate. Cold air returns from all major rooms are desirable but not necessary in all cases. In small houses which have an open central hall on all floors, the recirculation of air can be accomplished with one large grille or possibly two or three grilles located in the lower floor major rooms. This method can be used when the cost of installing the duct system must be kept at the lowest figure possible.

1. Locate the return grilles under windows or near outside doors so that the cold air due to infiltration will be drawn into the cold air returns before it can spread out over the floor.
2. Cold air returns must be located in all rooms which have floors at a lower level than the other rooms in the house.
3. One or more cold air returns should be located in all major rooms which have two or more supply registers.
4. In rooms which have an unusually large amount of glass area, one or more returns are necessary to prevent the cold air from these rooms from being drawn across the floor to a grille in an adjacent room.
5. Cold air returns should not be located in the side or bottom step of the staircase. This point should be borne in mind because very high suction velocity is required in order to cause a cold air stream coming down a stairway to reverse its direction 90° to 180° in order to reach the grille. Locate the cold air grille in halls so that the grille faces or is in front of the stairway.
6. Locate the return grille so that the warm air supply is not short circuited and drawn into the cold air duct.
7. The cold air grilles should be located with respect to the warm air supply so that good distribution and circulation will be produced.
8. Locate the return grilles so that there is a minimum of cross-overs with warm air and cold air ducts in the basement.
9. Locate the return grilles so that the joist spaces may be lined and used as basement ducts whenever possible.
10. Cold air returns must be used in basement recreation rooms and located in the wall at the floor level.
11. Do not locate cold air returns in the corner of a room because of the increased velocity of the air as it approaches the grille.

TYPES OF REGISTERS AND GRILLES

The type of registers and grilles should be carefully considered and definitely specified. The modern register is of such design that it can be painted to blend in with the wall and is not as conspicuous as the older types.

The name "Register" is used only when the register face is equipped with a damper for controlling the volume or velocity of the air. When a damper is not used, it is called a "Grille." Registers should be used for all warm air supplies and for cold air returns where it may be desirable to close them off, such as in sleeping rooms at night or in other rooms from which odors may originate. Grilles may be used for cold air returns where a damper is not necessary.

There are many types of registers and grilles on the market with various features, such as:

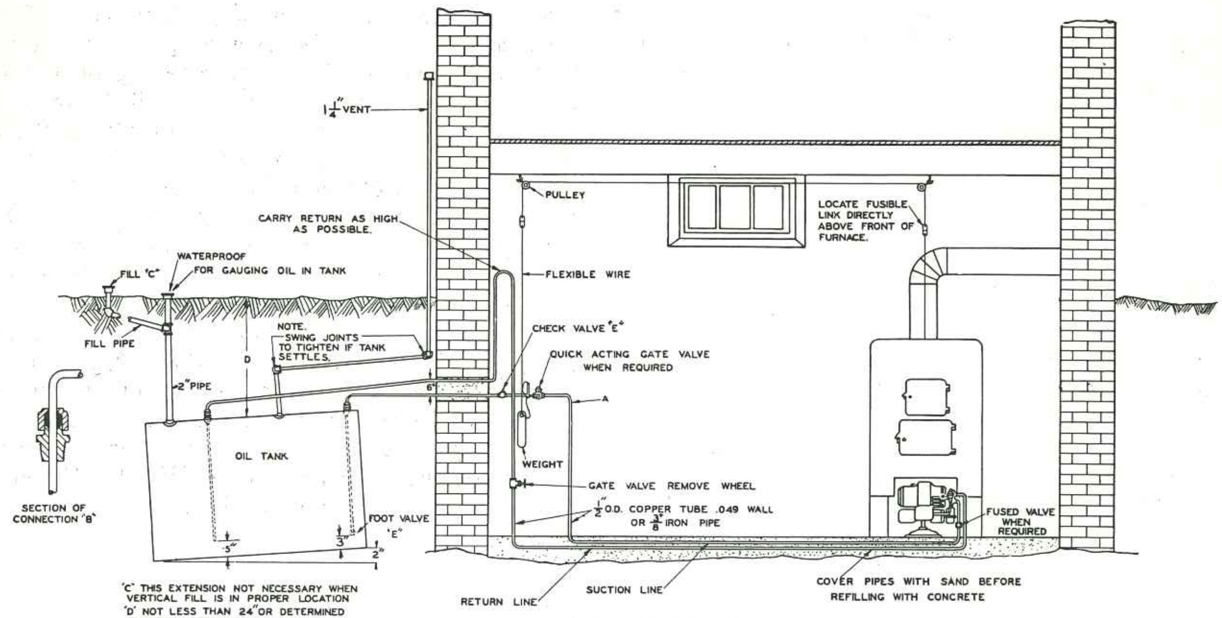
1. Directional control of the air stream.
2. Lever, key, screw, or chain operated dampers.
3. Fine mesh grilles for obscuring the stack head behind the grille.
4. Curved or special shaped grilles.
5 Ornamental face designs.

Register catalogs contain much valuable information which is necessary to the proper selection and specification of registers and grilles.

DUCT LAYOUT SERVICE

As an aid to architects and builders specifying Gilbert & Barker Air Conditioning equipment we have established a duct layout service. We strongly recommend that you avail yourself of this service, through the dealer in your community. The correct design of an air conditioning system requires considerable attention to many details and our staff of engineers is well qualified in handling these details. From the plans which you furnish us, an accurate calculation of the heat loss is made. The plans are then traced and the number, size and location of the supply and return registers and grilles determined. The distribution and recirculation system is then carefully laid out, taking into account all structural considerations and any special features which may have been specified. Working layouts are furnished to you in blueprint form. The size and type of equipment selected is shown on these blueprints as are also any special instructions pertaining to the installing of the system.

DIAGRAMMATIC INSTALLATION (OUTSIDE TANK)



1¼" VENT
CARRY RETURN AS HIGH AS POSSIBLE.
WATERPROOF
FILL "C"
FOR GAUGING OIL IN TANK
FILL PIPE
NOTE. SWING JOINTS TO TIGHTEN IF TANK SETTLES.
D
2" PIPE
6"
OIL TANK
SECTION OF CONNECTION "B"
5"
3"
2"
FOOT VALVE "E"
PULLEY
FLEXIBLE WIRE
LOCATE FUSIBLE LINK DIRECTLY ABOVE FRONT OF FURNACE.
CHECK VALVE "E"
QUICK ACTING GATE VALVE WHEN REQUIRED
A
WEIGHT
GATE VALVE REMOVE WHEEL
½" O.D. COPPER TUBE .049 WALL OR ⅜" IRON PIPE
FUSED VALVE WHEN REQUIRED
RETURN LINE
SUCTION LINE
COVER PIPES WITH SAND BEFORE REFILLING WITH CONCRETE

"C" THIS EXTENSION NOT NECESSARY WHEN VERTICAL FILL IS IN PROPER LOCATION

"D" NOT LESS THAN 24" OR DETERMINED BY LOCAL ORDINANCE

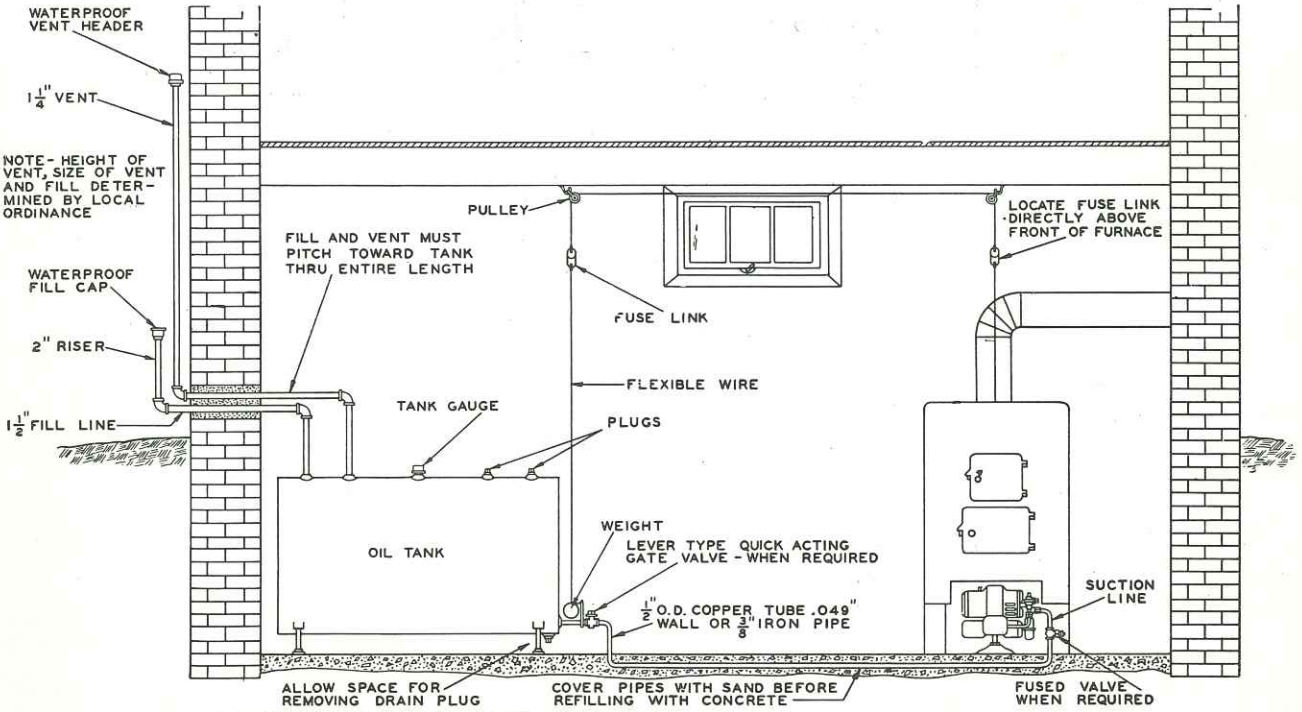
"E" FOOT VALVE SHOULD BE USED BUT IF THIS IS IMPOSSIBLE USE A HORIZONTAL BALL CHECK VALVE AT WALL.

"A" INSTALL ANTI SYPHON VALVE HERE WHEN LOCAL ORDINANCE REQUIRES. THIS IS SOMETIMES REQUIRED WHEN TOP OF TANK IS ABOVE BASEMENT FLOOR.

TWO PIPE SYSTEM

TYPICAL INSTALLATION DIAGRAMS

DIAGRAMMATIC INSTALLATION INSIDE TANK



WATERPROOF VENT HEADER
1¼" VENT
WATERPROOF FILL CAP
2" RISER
1½" FILL LINE
FILL AND VENT MUST PITCH TOWARD TANK THRU ENTIRE LENGTH
PULLEY
FUSE LINK
FLEXIBLE WIRE
LOCATE FUSE LINK DIRECTLY ABOVE FRONT OF FURNACE
TANK GAUGE
PLUGS
OIL TANK
WEIGHT
LEVER TYPE QUICK ACTING GATE VALVE - WHEN REQUIRED
½" O.D. COPPER TUBE .049" WALL OR ⅜" IRON PIPE
SUCTION LINE
FUSED VALVE WHEN REQUIRED
ALLOW SPACE FOR REMOVING DRAIN PLUG
COVER PIPES WITH SAND BEFORE REFILLING WITH CONCRETE

NOTE- HEIGHT OF VENT, SIZE OF VENT AND FILL DETERMINED BY LOCAL ORDINANCE

GRAVITY SINGLE PIPE SYSTEM

Form 0168A 3413

Printed in U. S. A.

DESIGN DIV.

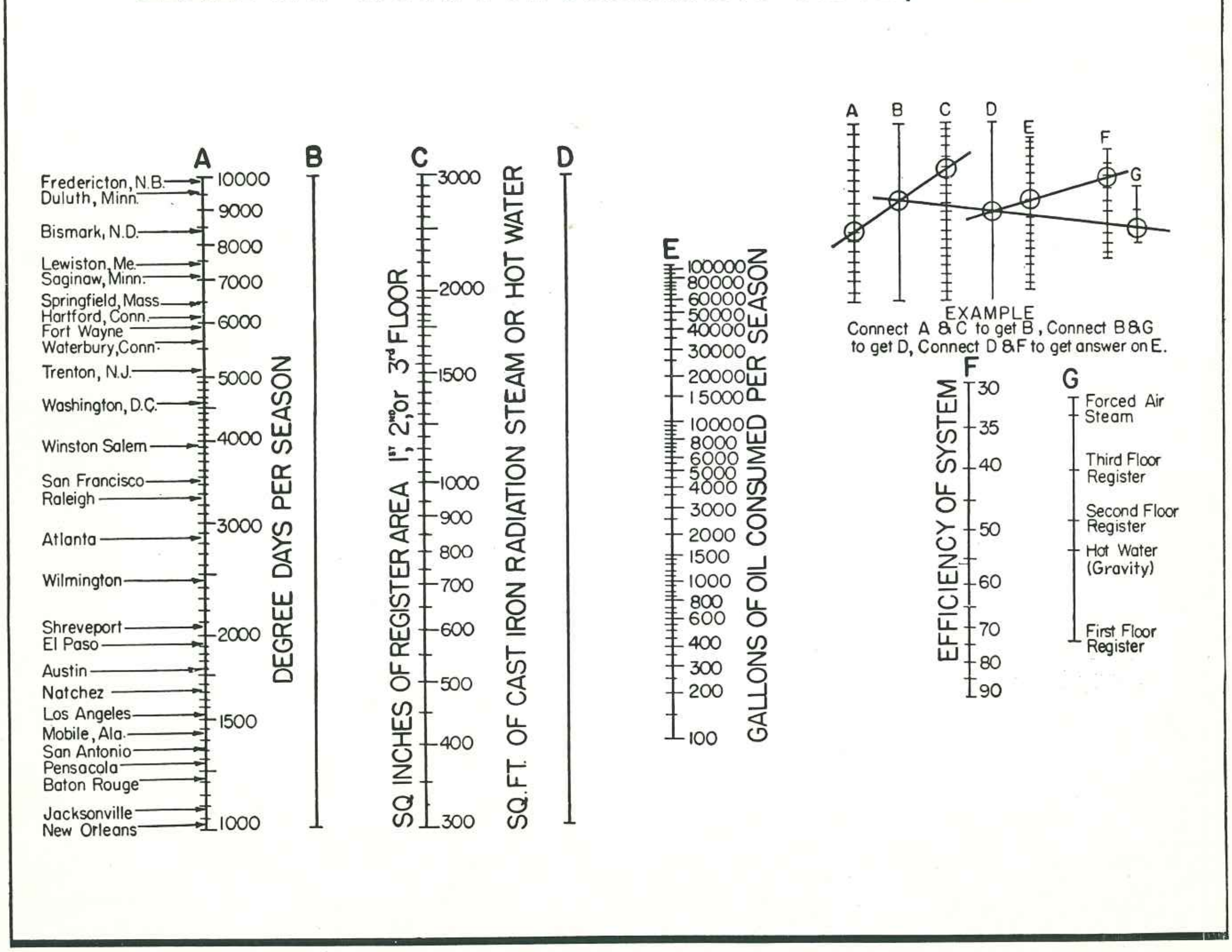
APPROXIMATION OF OIL CONSUMPTION

The problem of estimating oil consumption is a very difficult one, depending as it does on numerous factors any one of which may entirely upset calculated results. The following are a few of the elements that enter into this problem:

1. Efficiencies of Boiler, Burner and System.
2. Building construction of job to be heated.
3. Exposure.
4. Prevailing wind and average temperature conditions during heating season.
5. Length of heating season.
6. Heating value and general utility of fuel used.
7. Personal habits and requirements of occupants.
8. Climate (Degree-Days of locality).

The most satisfactory way of arriving at an estimate of the seasonal oil requirements for any one locality is to apply the so-called Degree Day Method. This method is based on the proven fact that people begin to heat their homes when the average temperature drops below 65° F. and use heat in proportion to the difference between 65° F. and the average prevailing temperature for any period. The period covering the total number of days in one year that heat will be required is known as the heating season. Multiplying the total number of heating days in any one locality by the difference between 65° and the average temperature for the same period gives us the total number of Degree Days per season. For instance, if in a particular city the mean average temperature dropped below 65° F. on 200 days and the average temperature for that period was 55° F., we would say there were 200 x (65-55) — 2000 Degree Days for that locality. The Degree Days for most localities in the United States may be obtained by referring to any standard text on heating or oil burning. This figure may also be obtained by computation after reference to Weather Bureau Climatological Data for any locality.

DEGREE DAY CHART FOR DETERMINING OIL REQUIREMENTS



EXAMPLE
Connect A & C to get B, Connect B & G to get D, Connect D & F to get answer on E.

Chart based on an average Fuel Oil with 141,000 B.T.U. per U. S. gallon. Radiation figured as net.

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